Modern packaging

Nominated for *Packaging's Hall of Fame*. Story on Page 90

February 1953

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Modern packaging

Vol. 26 No. 6 February 1953

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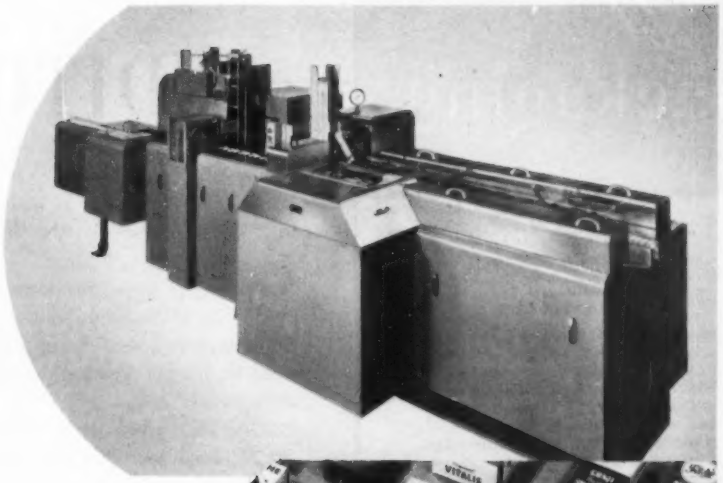
BOTTLES JARS VIALS



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EDITORIAL

Bachelor of packaging

"WHAT IS A PACKAGING ENGINEER?" is a question that has been bandied about for years—sometimes derisively, sometimes in honest inquiry. In truth, there is as yet no easy answer, because the term means different things in different companies.

Our lead article this month ("The Package Engineer," p. 77) analyzes what we consider not a typical situation, by any means, but one that has many interesting aspects. The package engineer at Bristol-Myers Co. is familiar with the engineering considerations of every package straight through from conception and design to procurement and production. And you'll note that in this case we call him a *package*, rather than packaging, engineer. A small distinction, perhaps, but we think important, because too often the engineer assigned to packaging is thought to be concerned only with the machinery and not with the package itself.

The need for a definition of the package or packaging engineer has been recognized in the last few years by many of our leading universities who have set up extension courses and even some undergraduate curricula in this subject.

Now comes the announcement from Michigan State College that it has inaugurated the first regular four-year college program ever offered in this country leading to a degree in packaging—Bachelor of Science in Packaging Technology. The program is administered by the Department of Forest Products.

Although the curriculum as presently set up seems to bear rather heavily on industrial, rather than consumer packaging, it is a tremendous step forward in a direction that many thoughtful people in packaging—including this magazine—have been urging for years. Michigan State frankly admits that it is feeling its way and the cooperation of industry in shaping the course to fit actual needs will be welcomed.

As the college points out, there are in this country at the present time fewer than 2,000 persons who might be called packaging specialists. The opportunity is enormous.

The Editors

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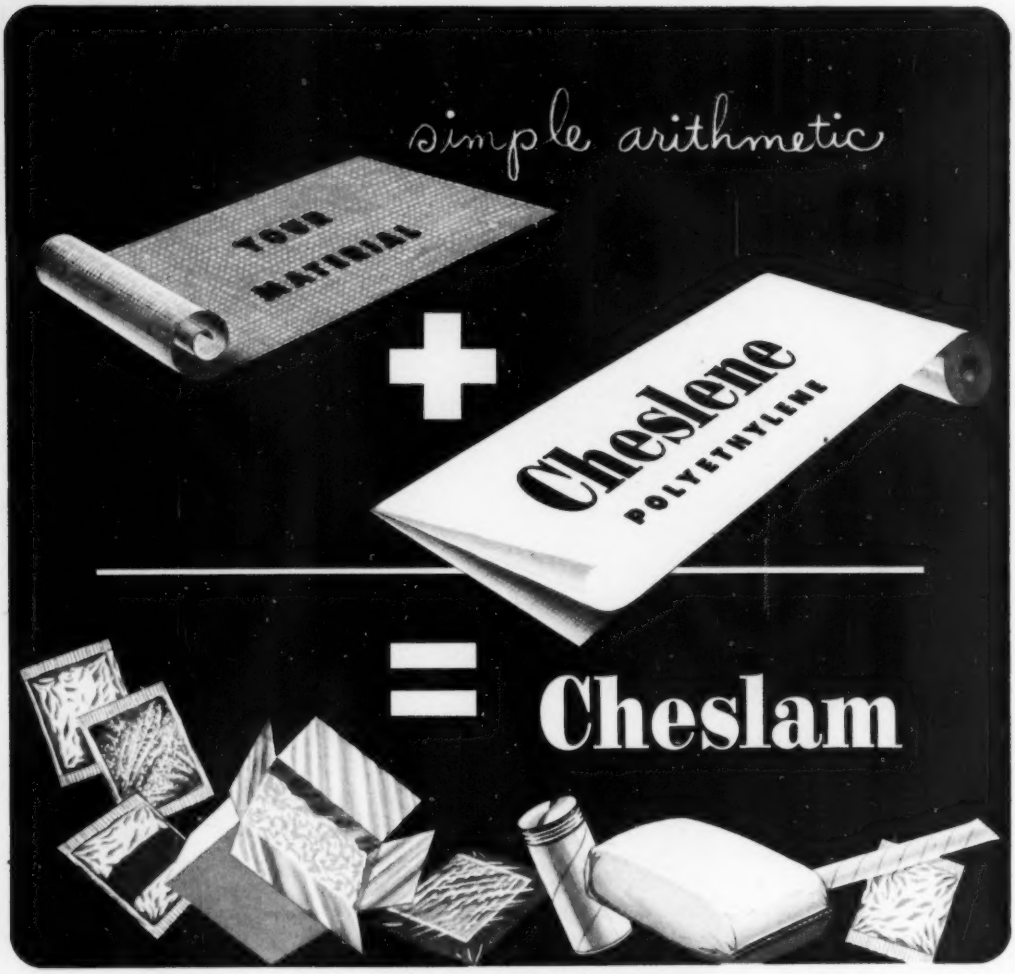

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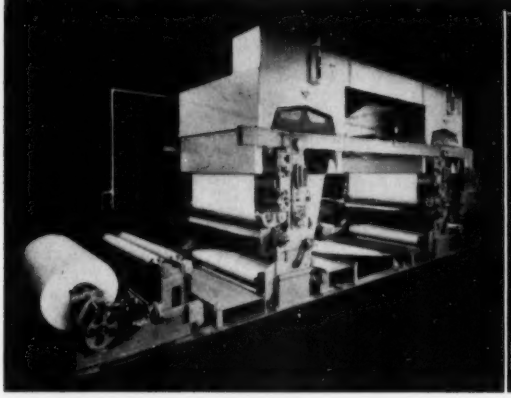

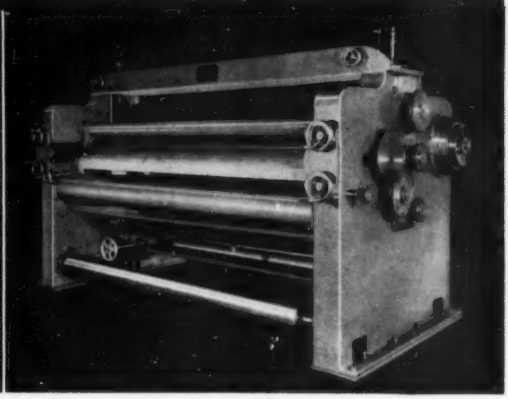

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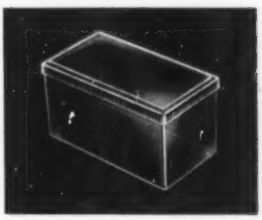

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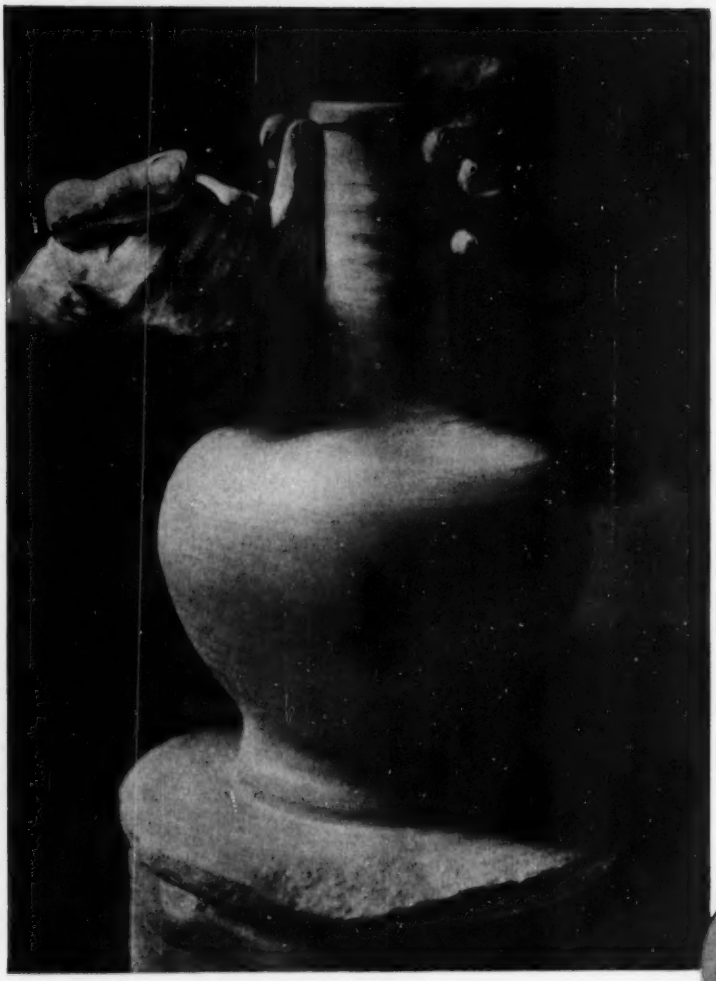

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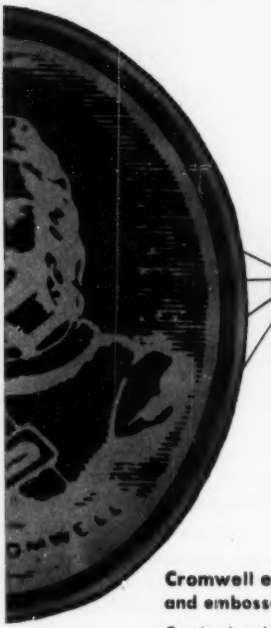

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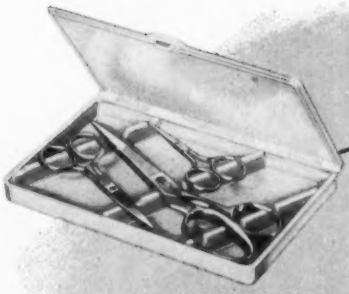


If your product needs "pushing" at the point of sale—and what product doesn't—put it in a Vlchek Plastic Box. Like the sizzle of a steak, Vlchek Plastic Boxes put folks in the buying mood.

Because these boxes are so beautiful and durable, they sell and serve the product. Foods, cosmetics, cutlery and many other products are all being successfully merchandised in these outstanding boxes.

Available in eight standard sizes and in 548 different compartment arrangements, Vlchek plastic boxes are also economical in special designs. Hinged or loose covers, opaque or transparent, any shape, any contour.

Call or write us. See what our experienced designers can suggest. Your inquiry will receive prompt attention.

PLASTICS DIVISION

THE VLCHEK TOOL COMPANY

3001 East 87th Street

CLEVELAND 4, OHIO

AN IMPORTANT ANNOUNCEMENT

To all Can and Container Manufacturers

Bliss
Can Machinery

- Slitters—Single
- Slitters—Duplex
- Bodymakers
- Flangers
- Beaders
- Seamers
- Testers
- Scroll Shears
- Strip Feed Presses
- Curlers

E. W. BLISS COMPANY is now in the process of re-activating its complete lines of automatic and semi-automatic can-making machinery for both general line and sanitary can production.

New Designs of high-speed can-making machinery are being made, and many existing machine designs are being modernized.

Enlarged Service Facilities will speed processing of orders for replacement parts and tooling.

You're invited to visit our Booth No. 115 at the Canners' Show

E. W. BLISS COMPANY • 50 Church St., New York 7, N. Y.

Excellence

is the word that most nearly describes the quality of wraps by **DANIELS.** We achieve it by paying the strictest attention to every detail from the drawing board to the printing press.

We invite Inquiries

Daniels

RHINELANDER, WISCONSIN

There is a **DANIELS** product to fit your needs printed in sheets and rolls . . . transparent glassine • snowdrift glassine • superkleer transparent glassine • lard pak • bacon pak • ham pak grease-proof • sylvania cellophane • laminated papers • special "Heat-Seal" papers.

PREFERRED PACKAGING SERVICE

SALES OFFICES: Rhinelander, Wisconsin
Chicago, Illinois . . Philadelphia, Pennsylvania . . Akron, Ohio
Denver, Colorado . . Dallas, Texas . . Los Angeles, California

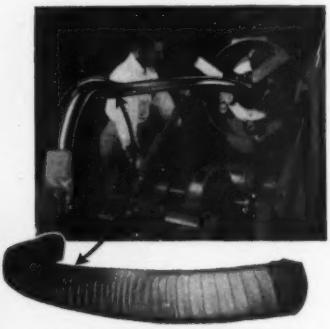
creators · designers · multicolor printers

Which of these PACKAGING IDEAS will save *your* time!

Vapor-from-Paper STOPS RUST

Saves greasing metal parts. Saves degreasing. It's Angier VPI® Wrap.

☐ *Check here for facts.*



New Machine Wraps Bumpers

Saves auto makers the job of hand wrapping. Does a better job —*faster.*

☐ *Check here for facts.*

Center-seam Sealing with Snake Tape

It's the FAST way to seal cartons, as the motion photo shows. And you get a *stronger* closure because Snake Tape is reinforced!

Center-seam sealing is accepted for parcel post, railway express, air express, and truck shipments; it also is accepted for carload and LCL rail shipments where rule 5, section 1 (c) of Uniform Classification applies.

☐ *Check here for FREE sample & facts.*

- *Reinforced*
- *Waterproofed*
- *Six widths*
- *Easily dispensed by "cut-off" type machines*

Our Industrial Papers Have Solved These Problems!

Can we help *you?*

☑ Check the ideas that interest *you* and send with letterhead to:

ANGIER CORPORATION
Framingham 11, Mass.

Angier

Since 1895 Manufacturers of Industrial Packaging Papers

You too can add product sales appeal

with MEHL

Plastic Packaging

PREMIUM PACKAGING

. . . add a world of extra "punch" to your product . . . invest in sales-making Mehl premium packaging.

FOOD PACKAGING AND PRE-PACKAGING

. . . give your product a personality—it looks better, is protected better and sells faster in Mehl plastic bags—all sizes and styles—plastic printing acclaimed finest ever offered.

SEE-SAFE PLASTIC STORAGE AND TRAVEL BAGS

. . . excellent items for clothing manufacturers, department stores, dress shops, cleaners. Stock or special designs to meet your requirements.

MILITARY PACKAGING

. . . widest range of protective barrier materials . . . meeting all government specifications . . . plus expert packaging advice.

CHEMICAL AND INDUSTRIAL PACKAGING

. . . new *circular bottom* polyethylene drum liners . . . plus a complete line of plastic, cellophane and other flexible packaging items.

SPECIALTIES

. . . whatever your product, there's probably a MEHL bag to fit your needs . . . give your product a "new look."

Let a Mehl bag help your product. *It's in the bag—"safe and you can see it."* Samples and complete information available.

VISIT OUR BOOTH 148 AT THE

22nd National Packaging Exposition
April 20-23, 1953
Navy Pier, Chicago

MEHL

Division of Sydney-Thomas Corporation

MANUFACTURING COMPANY

2057 Reading Road • Cincinnati 2, Ohio

Where m is the mass of the moving body, v its velocity along the circumference, and r the radius of the curved path.

A body revolving in a curved path exerts a force, called centrifugal force, on the arm or cord that restrains it from moving in a straight line.

One of the best-known applications of centrifugal force is the cream separator with rapidly rotating bowl which throws heavier milk ingredients to the outer radius away from the lighter weight cream.

KVP

PAPERS for the FOOD INDUSTRY

THE FOOD INDUSTRY is notable for its progress. Paper has helped. Paper—the proper kind—*protects* food products. Paper—properly designed—*sells* food products.

KVP specializes in both. KVP chemists and engineers give papers what it takes to keep food products clean and wholesome, and KVP artists and printers give them what it takes to attract buyers.

KVP

KALAMAZOO VEGETABLE PARCHMENT CO.

PARCHMENT, MICHIGAN

ASSOCIATED COMPANIES:

KALAMAZOO VEGETABLE PARCHMENT CO.
DEVON, PENNSYLVANIA

KVP COMPANY OF TEXAS
HOUSTON, TEXAS

HARVEY PAPER PRODUCTS CO.
STURGIS, MICHIGAN

IN CANADA:

THE KVP COMPANY LIMITED
ESPANOLA, ONTARIO

APPLEFORD PAPER PRODUCTS LIMITED
HAMILTON, ONTARIO
MONTREAL, QUEBEC

INDUSTRIES SERVED

BAKING
Bread — Cracker
Cereal

MEAT
Packing — Locker
Retail

DAIRY
Butter — Cream — Cheese
Ice Cream — Milk

FISH • FRUIT • FROZEN FOODS
POULTRY • SHORTENING • VEGETABLE

SINCE 1889

JOHNSTON

MODERN IN METHODS...

OLD IN SERVICE...

FOIL

ALUMINUM...TIN...LEAD, COMPOSITION TIN, LEAD

FOREMOST IN *Quality...*

Re-armament needs come first,
and JOHNSTON Foils are first
choice of scores of Industries
now producing for national defense.

What are* YOUR *needs?

JOHNSTON FOIL MANUFACTURING CO.

6016-6298 S. BROADWAY ST. LOUIS 11, MO.

SALES OFFICES
608 SOUTH DEARBORN CHICAGO, ILLINOIS
30 EXCHANGE PLACE JERSEY CITY, NEW JERSEY
633 SOUTH LA BREA AVE LOS ANGELES, CALIFORNIA

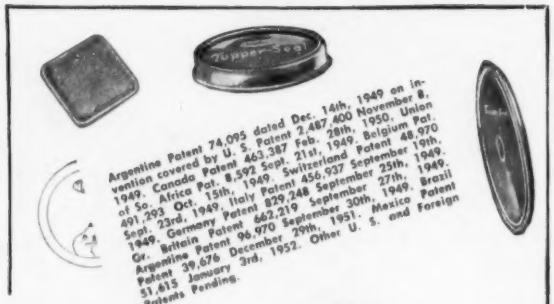
Tupper Seal, air and liquid tight flexible covers fit, and are included in the sets of all Tupperware Canisters.

The Tupperware 50 oz. Canister is "standard equipped" with the Tupper Seal, air and liquid-tight flexible Pour All cover.

The Tupper Seal, air and liquid-tight flexible Pour All cover is used on every Tupperware 20 oz. Canister.

The Tupper Seal, air and liquid-tight, Pour All cover as a cover for 46 oz. cans; Tupperware Sauce Dishes and other containers of metal, glass or pottery. Foods easily dispensed without removing entire cover.

The Tupperware Wonder Bowls are usually fitted with Tupper Seal, air and liquid-tight covers.



Argentine Patent 74,095 dated Dec. 14th, 1949 on invention covered by U. S. Patent 2,487,400 November 8, 1949. Canada Patent 463,387 Feb. 28th, 1950. Union of So. Africa Pat. 8,592 Sept. 21st, 1949. Belgium Pat. 491,293 Oct. 15th, 1949. Italy Patent 429,248 September 25th, 1949. Sept. 23rd, 1949. Germany Patent 662,219 September 27th, 1949. 1949. Switzerland Patent 48,970 Gr. Britain Patent 96,970 September 30th, 1949. Brazil Argentine Patent 39,676 December 29th, 1951. Mexico Patent 51,615 January 3rd, 1952. Other U. S. and Foreign Patents Pending.

TUPPER! Seals air and liquid-tight, flexible covers for Tupperware Tumblers, Canisters, Wonder Bowls, Cereal Bowls and many another container of glass, metal and pottery, the contents of which it is desired to keep fresh and wholesome.

TUPPER!

FORMAL NOTICE! 9th November, 1949

EXCLUSIVE!

U. S. Patent #2,487,400

The Tupper Corporation has attained a position of leadership in this industry by incurring great expense and expending painstaking effort in the development, design, manufacture and exploitation of its many world-known products.

The Tupper Corporation further has anticipated the inevitable attacks to which leadership is subject and has taken measures provided by law to preserve the creative rights to its products, methods and design by patent protection both in the United States and abroad.

Tupper Seals for Tupperware shown in this advertisement are just a few of the forms covered in this manner and are specifically covered by U.S. Patent #2,487,400.

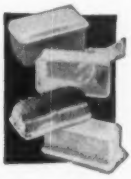
Only the Tupper Corporation, by U.S.Patent #2,487,400 has the right to make, use and vend container closures in connection with any and all types of containers throughout the United States and its territories as covered by the claims of the Patent.

Tupper Corporation will protect, according to law, the exclusive rights above granted

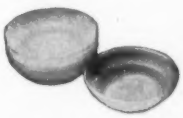
TUPPER CORPORATION

There's a Tupper Seal, air and liquid-tight flexible cover for Tupperware 2, 5, 8 and 12½ oz. Tumblers too, and these Tupper Seal, covers fit many other containers of metal, glass and crockery.

The Tupper Seal, air and liquid-tight flexible Pop Top cover, specially designed as a dispensing cover for specified diameters of containers holding foods such as syrups, salad dressings, catsup.



The cover of the Tupperware Bread Server which serves as a bread tray also is designed to give similar results as Tupper Seal, air and liquid-tight Flexible covers. Keeps contents fresh as no other such container.



When equipped with Tupper Seal, air and liquid-tight, flexible covers, Tupperware Cereal Bowls serve many another purpose.

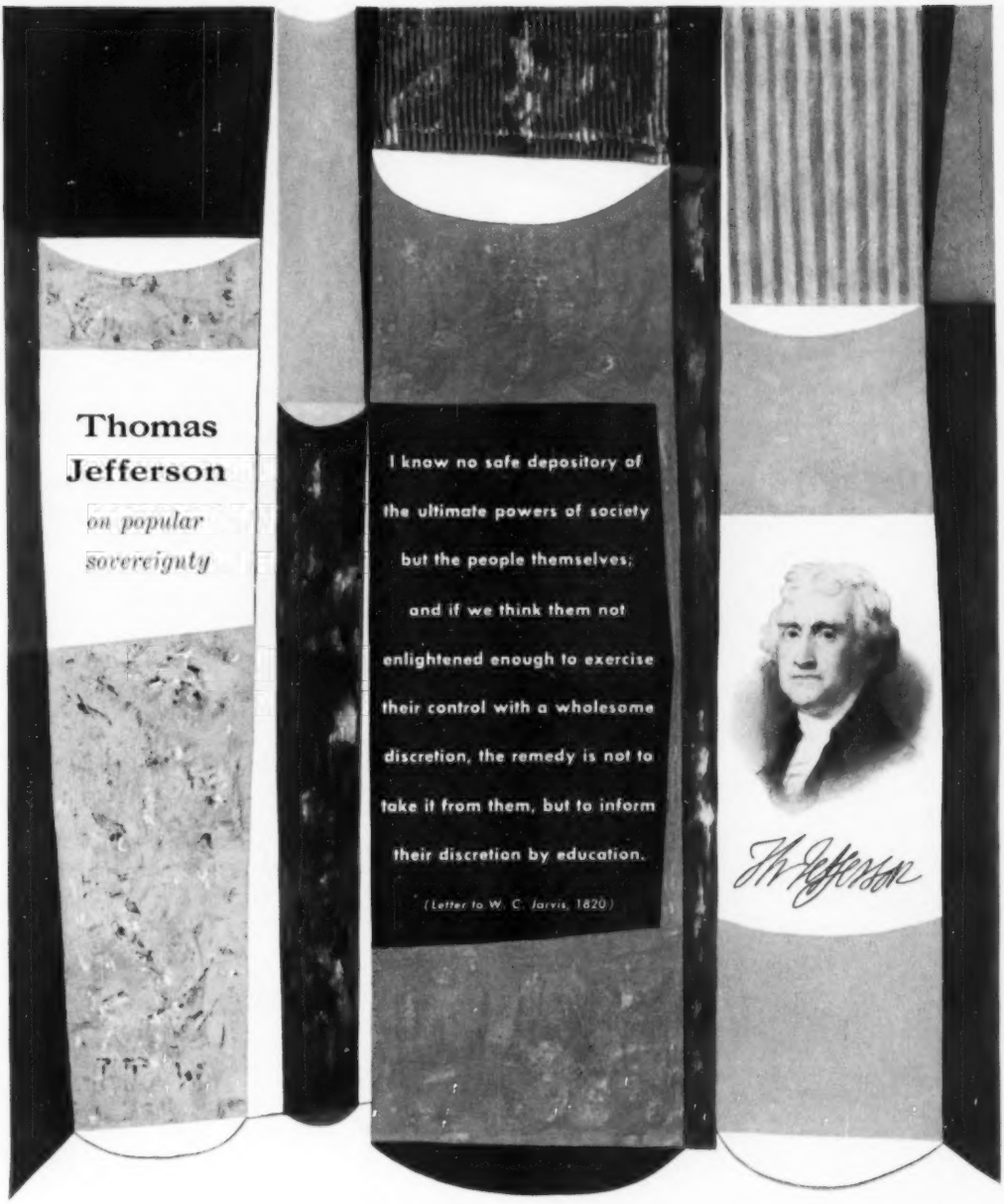
The Tupper Seal, air and liquid-tight flexible cover made for Tupperware 8 oz. Tumblers also fits and is sold with all Tupperware Funnels as a base when funnels are used as storage containers.

TUPPER CORPORATION

Manufacturers of — CONSUMER, INDUSTRIAL, PACKAGING AND SCIENTIFIC PRODUCTS

Factories, Laboratories and Sales Offices: Farnumsville, Mass., Orlando, Fla., L'Epiphanie, P. Q.
Showrooms: 225 Fifth Ave., N.Y.C.
ADDRESS ALL COMMUNICATIONS TO: Department MP-2

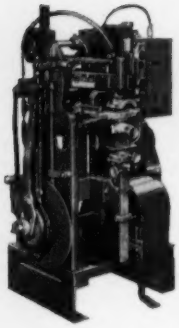
COPYRIGHT TUPPER CORPORATION 1949


Thomas Jefferson
on popular sovereignty
I know no safe depository of the ultimate powers of society but the people themselves; and if we think them not enlightened enough to exercise their control with a wholesome discretion, the remedy is not to take it from them, but to inform their discretion by education.
(Letter to W. C. Jarvis, 1820)
Th. Jefferson

Artist: John Atherton

CONTAINER CORPORATION OF AMERICA

Choose your labeler from the Label-DRI® family—



The PONY *Label-DRI*
up to 60/m

EVERY HOUR IS ALL PRODUCTION TIME with NO DOWNTIME for glue preparation!

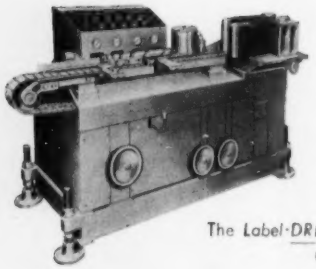
Here's why DRY LABELING
makes Glue obsolete...

Dry labeling—done on the *Label-DRI* means that your labels—coated with plastic adhesive attain perfect tackiness through an accurately controlled heating element. They are literally *bonded* to the package, from edge to edge.

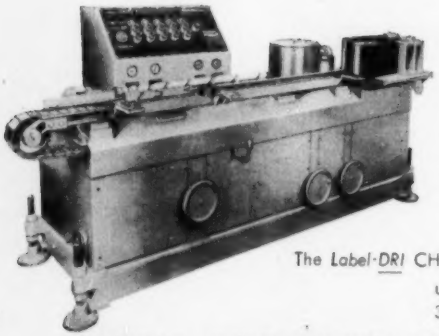
With glue, you have no such sustained performance. Too much water causes blisters and imperfect adhesion. Too little water causes excess adhesive, glue seepage and crystallization.

Only when the perfect balance of water and glue is contrived, do you get the results wanted. It takes constant care, and frequent interruptions for mixing or adding glue or water, to keep such equipment operating. With morning preparation, and evening clean-up, you lose approximately 40 minutes a day. Which, at even 100/m lowers production volume by 4,000 units per day.

Only DRI LABELING—the *Label-DRI* eliminates these many lost minutes. It delivers more work because every hour is productive—with no downtime, and no variables to fight.



The *Label-DRI* CHALLENGER
up to 150/m



The *Label-DRI* CHAMPION
up to
300/m

Try the DRI-way!

Write for complete details!

911

NEW JERSEY MACHINE *Corporation*

AUTOMATIC LABELING • PACKAGING — PAPER BOX MACHINERY • MAKERS OF THE PONY LABELRITE

FACTORY SALES AND SERVICE BRANCHES
325 W. HURON ST., CHICAGO 10, ILL.
1701 CAREW TOWER, CINCINNATI 2, OHIO
2500 W. 6TH ST., LOS ANGELES 5, CAL.

MAIN OFFICE & FACTORY: 1510 WILLOW AVENUE, HOBOKEN, N. J.

PAPER FOR TOUGH JOBS and Beauty too

Master Whiteprint

Users of Ozalid or Bruning type photo copy machines know Master Whiteprint for the extremely clear copies possible with this quality master paper. Excellent writing and printing surface, white appearance, curl-free, good erasability, uniformity—Master Whiteprint is the modern answer to better, faster photo copies.

Snowdrift, glassine

Those colorful and informative labels, recipes and advertising inserts in pre-packaged bakery goods, mixes and meats are generally made from Rhinelander Snowdrift Glassine. The perfect paper to shrug off grease and moisture, Snowdrift Glassine also provides a brilliant opaque background for printed design.

Aqua-Tuf Parchment

Wet strength, greaseproofness, odor control, moldability, ease of handling—Aqua-Tuf boasts them all. Unequalled for packaging butter, oleo, ice cream, fresh produce, and many other items which were formerly serious packaging problems.

Parchstone

Greeting card manufacturers have discovered Parchstone's ability to lend added beauty to their finest designs. Subtle, delicate contrasts of translucency and opacity give this genuine parchment an amazing elegance and richness. Perfect adaptability to all printing processes makes Parchstone ideal for distinctive direct mail advertising pieces, too.

Special Papers

Glassine and greaseproof papers do a host of difficult jobs well. We pride ourselves on that ability to tailor-make a paper that will solve practically any protective packaging problem. Specific inquiries are invited.

RHINELANDER PAPER COMPANY
RHINELANDER, WISCONSIN

IT SELLS ITSELF—

when your product is wrapped in

SYLVANIA CELLOPHANE

nice and FRESH!
clean and BRIGHT!
looks so GOOD!

Here's a picture of a housewife making up her mind . . . with the help of Sylvania Cellophane! Sylvania Cellophane seals in freshness and flavor—seals out dust and dirt—discourages unnecessary handling or pinching—helps stop stale returns. Baked goods are their own best salesmen when packaged appealingly in Sylvania Cellophane—the protective wrap that improves the appearance of everything it goes on!

Sylvania Division, American Viscose Corporation, 1617 Pennsylvania Blvd., Philadelphia 3, Pa.

SYLVANIA DIVISION, AMERICAN VISCOSE CORPORATION

SYLVANIA CELLOPHANE ®

ARVEY®

Laminated Plastics

MAKE

"MIRACLE" PACKAGES

FOR "DIFFICULT" PRODUCTS

LIQUIDS . . . SEMI-LIQUIDS . . . POWDERS

Whether yours is a sample or a resale package, there's a perfect Arvey *laminated combination of transparent plastics* (or paper-backed foil with plastic) to do the job better!

Laminated plastics make the seemingly impossible POSSIBLE

Study of your product and packaging requirements directs Arvey's lamination of the perfect pair into one ideal unit, transparent or opaque. America's most modern equipment laminates a multitude of films such as pliofilm, polyethylene, cellophane, paper-backed foil, vinyl and Saran into flexible packages.

Arvey combines "miracles" with *sales wallop!*

Years of skillful designing and printing make your package outstanding—an effective builder of impulse sales. Successful solving of a variety of packaging problems for leading manufacturers in many fields is a habit with Arvey—a success habit that guarantees your package *powerful sales punch!*

Write Today *for full details—our research laboratory will gladly help you develop the perfect* laminated plastic package—*our creative, designing and multi-color printing facilities will add the selling punch at the point of purchase.*

LAMCOTE PACKAGING DIVISION OF

ARVEY CORPORATION

Since 1905 ® 3462 N. Kimball Avenue • Chicago 18, Illinois

Your package can win Consumer acceptance-

acceptance based on convenience . . . on the complete *satisfaction* of UL Super-Sealtite *Feather-Light Tear.

Your package can feature protection against contamination, breakage, spoilage. Because of *Feather-Light Tear it can feature an ease of access to your product not obtainable with other methods of unit-packaging.

The complete UL packaging service—from your product in bulk to its delivery in packages—calls for no capital investment for you. Let UL save you money on packaging for standard sale use or for sampling—and with a package that has already won consumer approval. Details and samples are yours for the asking.

*REGISTERED

Notice! Super-Sealtite provides

- *Feather-Light Tear (not just a series of pin-point perforations). Double tear notches—on opposite sides of each pocket.
- Complete Protection—attained through selection and adaptation of the right packaging material for your product.
- Easy Adaptation of package to varying product sizes, requirements and new package design.

These are the plus features you get from Super-Sealtite.

IVERS UNIT PACKAGING LEE CO.

215 CENTRAL AVENUE NEWARK, NEW JERSEY

Creators of SUPER-SEALTITE — the Package That Never Stops Selling

CONTRACOATER*

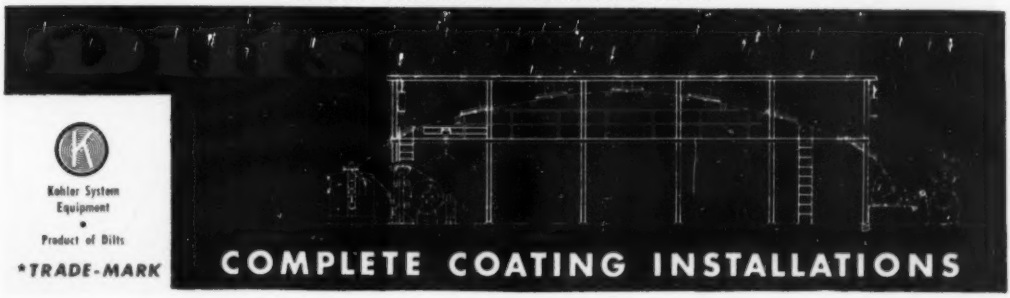
A REVERSE ROLL
COATER
for the

...ganisols •
plastisols • ... • fabric and film

Arrange for your materials to be trial-coated on the "Contracoater" in the new Dilts Laboratory at Fulton. Bulletin DLF-1005 describes the new laboratory and outlines the arrangements for its use.

DILTS MACHINE WORKS, Fulton, New York

SHARTLE BROS. MACHINE CO., Middletown, Ohio • *Divisions of* THE BLACK CLAWSON COMPANY, Hamilton, Ohio
Subsidiary: B-C INTERNATIONAL, LTD., London S. W. 1, England
Associate: THE ALEXANDER FLECK LIMITED, Ottawa, Canada • *Western Sales Office:* Mayer Bldg., Portland, Oregon
Southern Sales Office: 685 W. Peachtree St., N. E., Atlanta 3, Ga. • *Northern Sales Office:* 814 N. Superior St., Appleton, Wisc.
Northeastern Sales Office: Dilts Machine Works Div., Fulton, N. Y.



Kohler System Equipment
•
Product of Dilts

*TRADE-MARK

COMPLETE COATING INSTALLATIONS

4 good reasons for choosing CROWN CLOSURES

1 CROWN CLOSURES SEAL BETTER

Only Crown Screw Caps have the patented Deep Hook Thread. The under-reaching grip of this thread exerts an almost vertical down-pull, providing greater sealing pressure without binding or wedging.

Crown Lug Caps, because of their flexible structure, have an even, uniformly distributed down-pull. They seal securely and are easily removed with a simple quarter-turn action.

2 CROWN LINERS ARE DEPENDABLE

In Crown Closures, great emphasis is placed on the quality and suitability of the liner for the product. Crown's years of accumulated sealing knowledge is at the disposal of customers.

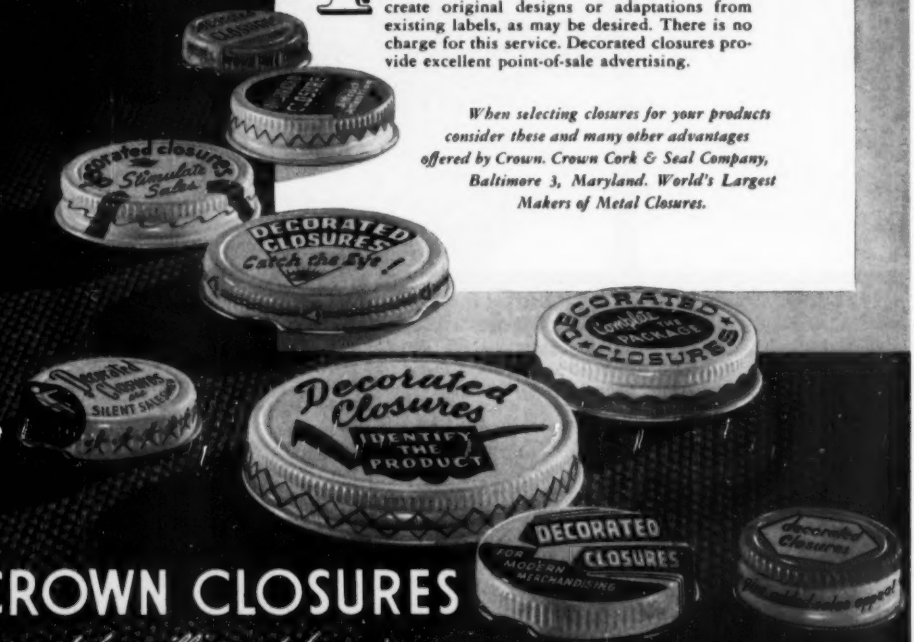
3 EXTENSIVE LABORATORY SERVICE

Crown maintains two separate laboratories. One for the research and development of improved sealing materials. The other serves exclusively as a customer's consulting service available without cost to assist them in solving processing and sealing problems.

4 SKILLED DESIGN SERVICE

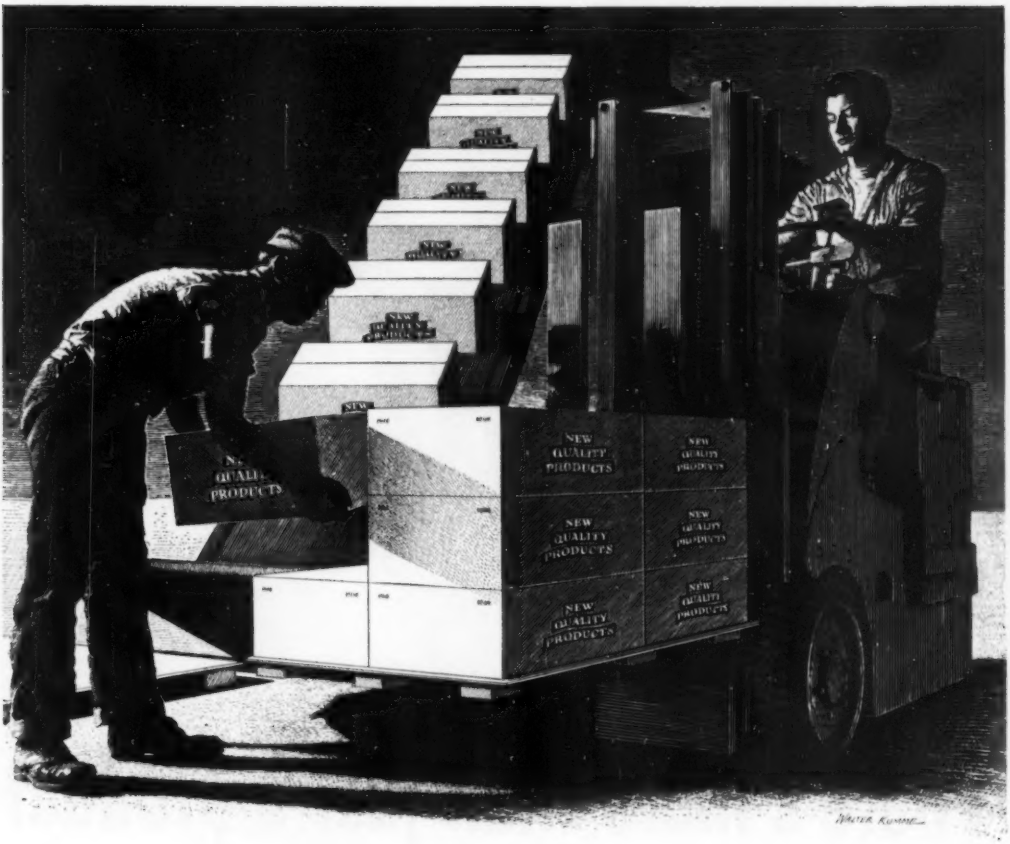
Crown provides a comprehensive Design Service to develop designs for decorated closures. Crown artists, who are specialists in this field, create original designs or adaptations from existing labels, as may be desired. There is no charge for this service. Decorated closures provide excellent point-of-sale advertising.

When selecting closures for your products consider these and many other advantages offered by Crown. Crown Cork & Seal Company, Baltimore 3, Maryland. World's Largest Makers of Metal Closures.


Decorated Closures Stimulate Sales
DECORATED CLOSURES Catch the Eye!
DECORATED CLOSURES Complete the PACKAGE
Decorated Closures SILENT SALES
Decorated Closures IDENTIFY THE PRODUCT
DECORATED CLOSURES FOR MODERN MERCHANDISING
Decorated Closures

CROWN CLOSURES

Approved by millions of housewives



Gaylord Boxes That Proudly Bear Your Name Reflect the Quality of Your Product

Don't overlook the advertising value of attractive, colorful shipping containers in your merchandising and selling plans.

Sales-minded manufacturers prefer distinctive Gaylord Boxes. Their clear printing and over-all quality are effective sales stimulants for the product inside—through every step of distribution.

For prompt service consult the Gaylord sales office nearest you. It's listed in the classified pages of your phone book.

Gaylord Boxes

Their unseen quality gives you an extra margin of safety.

GAYLORD CONTAINER CORPORATION

General Offices: ST. LOUIS • Sales Offices Coast-to-Coast

CORRUGATED AND SOLID FIBRE BOXES • FOLDING CARTONS • KRAFT BAGS AND SACKS • KRAFT PAPER AND SPECIALTIES

There's more than just a product in the most effective packages

There's an idea in this new package—convenient dispensing of the product. Your package may not call for so unusual a design. But it does call for a knowledge of such factors as consumer convenience, effective display, sales appeal of visibility, informative labeling, and the use of multiple and fractional put-ups.

You can count on Du Pont for help in planning a package that fits into today's buying trends. Get in touch with your Du Pont representative. He'll help you also in choosing the film that's best suited to your product . . . and in assuring the most efficient construction of your package. For information on bags and printed materials get in touch with a converter of Du Pont packaging films. E. I. du Pont de Nemours & Co. (Inc.), Film Department, Wilmington 98, Delaware.

Only Du Pont gives you all these packaging aids:

1. **WIDE VARIETY OF PACKAGING FILMS** scientifically tailored to meet the needs of varied products and packages.
2. **TECHNICAL** assistance to help you plan the most practical and efficient construction of your package.
3. **MERCHANDISING** help through continuing nationwide surveys of buying habits, to keep your package up to date.
4. **NATIONAL ADVERTISING** to continually strengthen consumer preference for your packaged products.

DU PONT
PACKAGING FILMS
CELLOPHANE
POLYETHYLENE • ACETATE

DU PONT
REG. U.S. PAT. OFF.

Better Things for Better Living
. . . through Chemistry

Oxford Papers

Help Build Sales

**Born of the camera,
fostered by the printed page**

Behind the dynamic growth of the photographic industry lies its program of educating people to take *more* pictures and *better* pictures. Today 2 out of 3 Americans are amateur photographers. . . . Much of this industry's printed promotion appears on Oxford papers. These finer papers give more precise definition and brilliance of color to illustrations. Oxford grades are fit foundation for pages that sell photography.

For your next offset job

Specify

OXFORD

MIAMI PAPER COMPANY

Wescar Gloss Plate Offset

OXFORD PAPER COMPANY
RUMFORD, MAINE • WEST CARROLLTON, OHIO

Gloss Plate is a new paper especially manufactured with a light coating film and high gloss to give maximum sheen and detail to printed results. Its bright white color and smooth, even surface assure sharp, brilliant black and white and multi-color reproduction for the finest offset jobs.

IT PAYS TO ASK FOR — AND USE THESE FINE OXFORD AND OXFORD MIAMI PAPERS

COATED PAPERS	*UNCOATED PAPERS*
Polar Superfine Enamel	Carfax English Finish
Maineflex Enamel	Carfax Super
Maineflex Enamel Cover	Carfax Eggshell
Maineflex Enamel, Coated One Side	Wescar Offset
Mainefold Enamel	Wescar Satin Plate Offset
Mainefold Enamel Cover	Wescar Gloss Plate Offset
North Star Dull Enamel	English Finish Litho
Seal Enamel	Super Litho
Engravatone Coated	Duplex Label
Coated Publication Text	

Nation-wide Service Through Oxford Merchants

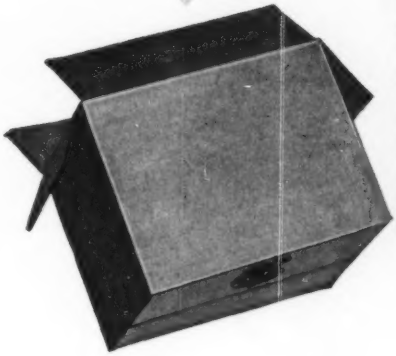
Albany, N. Y.	W. H. Smith Paper Corp.
Atlanta, Ga.	Wyant & Sons Paper Co.
Augusta, Maine	Carter, Rice & Co. Corp.
Baltimore, Md.	The Mudge Paper Co.
Bethlehem, Pa.	Wilcox-Walter-Furlong Paper Co.
Boise, Idaho	Blake, Moffitt & Towne
Boston, Mass.	Carter, Rice & Co. Corp.
Buffalo, N. Y.	Franklin-Cowan Paper Co.
Charlotte, N. C.	Caskie Paper Co., Inc. The Charlotte Paper Co.
Chattanooga, Tenn.	Bond-Sanders Paper Co.
Chicago, Ill.	Bermingham & Prosser Co. Bradner, Smith & Co. The Whitaker Paper Co.
Cincinnati, Ohio	The Johnston Paper Co. The Whitaker Paper Co.
Cleveland, Ohio	The Cleveland Paper Co.
Columbus, Ohio	Scioto Paper Co.
Dayton, Ohio	Cincinnati Cordage & Paper Co. The Whitaker Paper Co.
Des Moines, Iowa	Bermingham & Prosser Co.
Detroit, Mich.	Chope Stevens Paper Co.
Fresno, Calif.	Blake, Moffitt & Towne
Hartford, Conn.	Green & Low Paper Co., Inc.
Indianapolis, Ind.	MacCollum Paper Co.
Jacksonville, Fla.	Jacksonville Paper Co.
Kalamazoo, Mich.	Bermingham & Prosser Co.
Kansas City, Mo.	Bermingham & Prosser Co.
Knoxville, Tenn.	Louisville Paper Co.
Lincoln, Neb.	Western Newspaper Union
Little Rock, Ark.	Roach Paper Co.
Long Beach, Calif.	Blake, Moffitt & Towne
Los Angeles, Calif.	Blake, Moffitt & Towne
Louisville, Ky.	Louisville Paper Co.
Lynchburg, Va.	Caskie Paper Co., Inc.
Manchester, N. H.	C. H. Robinson Co.
Memphis, Tenn.	Louisville Paper Co.
Miami, Fla.	Everglades Paper Co.
Milwaukee, Wis.	Allman-Christiansen Paper Co. Sensenbrenner Paper Co.
Minneapolis, Minn.	Wilcox-Mosher-Leffholm Co.
Nashville, Tenn.	Bond-Sanders Paper Co.
Newark, N. J.	Bulkley, Dunton & Co., Inc.
New Haven, Conn.	Bulkley, Dunton & Co. *(Div. of Carter, Rice & Co. Corp.)*
New York, N. Y.	Baldwin Paper Co., Inc. Bulkley, Dunton & Co., Inc. Green & Low Paper Co., Inc. Miller & Wright Paper Co. The Whitaker Paper Co.
Oakland, Calif.	Blake, Moffitt & Towne
Omaha, Neb.	Western Paper Co.
Philadelphia, Pa.	Atlantic Paper Co. Wilcox-Walter-Furlong Paper Co.
Phoenix, Ariz.	Blake, Moffitt & Towne
Pittsburgh, Pa.	General Paper Co. Brubaker Paper Co.
Portland, Maine	C. H. Robinson Co.
Portland, Oregon	Blake, Moffitt & Towne
Providence, R. I.	Carter, Rice & Co. Corp.
Richmond, Va.	Cauthorne Paper Co.
Rochester, N. Y.	Genesee Valley Paper Co.
Sacramento, Calif.	Blake, Moffitt & Towne
St. Louis, Mo.	Bermingham & Prosser Co. Shaughnessy-Kniep-Hawe Paper Co. Tobey Fine Papers, Inc.
San Bernardino, Cal.	Blake, Moffitt & Towne
Salt Lake City, Utah	Western Newspaper Union
San Diego, Calif.	Blake, Moffitt & Towne
San Francisco, Calif.	Blake, Moffitt & Towne
San Jose, Calif.	Blake, Moffitt & Towne
Seattle, Wash.	Blake, Moffitt & Towne
Sioux City, Iowa	Western Newspaper Union
Spokane, Wash.	Blake, Moffitt & Towne
Springfield, Mass.	Bulkley, Dunton & Co. *(Div. of Carter, Rice & Co. Corp.)*
Stockton, Calif.	Blake, Moffitt & Towne
Tacoma, Wash.	Blake, Moffitt & Towne
Tampa, Fla.	Tampa Paper Co.
Toledo, Ohio	Paper Merchants, Inc.
Tucson, Ariz.	Blake, Moffitt & Towne
Washington, D. C.	The Mudge Paper Co.
Worcester, Mass.	Esty Div. Carter, Rice & Co. Corp.

OXFORD PAPER COMPANY, *230 Park Avenue, New York 17, N. Y.* ★ **OXFORD MIAMI PAPER COMPANY**, *35 East Wacker Drive, Chicago 1, Ill.*

Mills at Rumford, Maine, and West Carrollton, Ohio

Experienced buyers look at the Pedigree

buyers of boxes, too



THE COCKER SPANIEL, American member of a family that traces back to the 14th century, is still a great favorite with sportsmen. Cockers are said to be so named because they were first used in hunting woodcocks. Affectionate and merry, they are perfect family pets.

FOR ASSURANCE OF *Quality*
FOR ASSURANCE OF *Service*
FOR ASSURANCE OF *Fair Price*

MOST corrugated containers *look* alike. But the difference shows up in performance.

The famous Union shield trade-mark is your assurance that every step in making the box, from the forest to the finishing room, is handled by trained personnel in the largest Kraft pulp-to-container plant in the world.

It symbolizes seventy-five years of leadership in designing, engineering and producing paper packages . . . plus long experience as one of the nation's larger producers of Kraft container board.

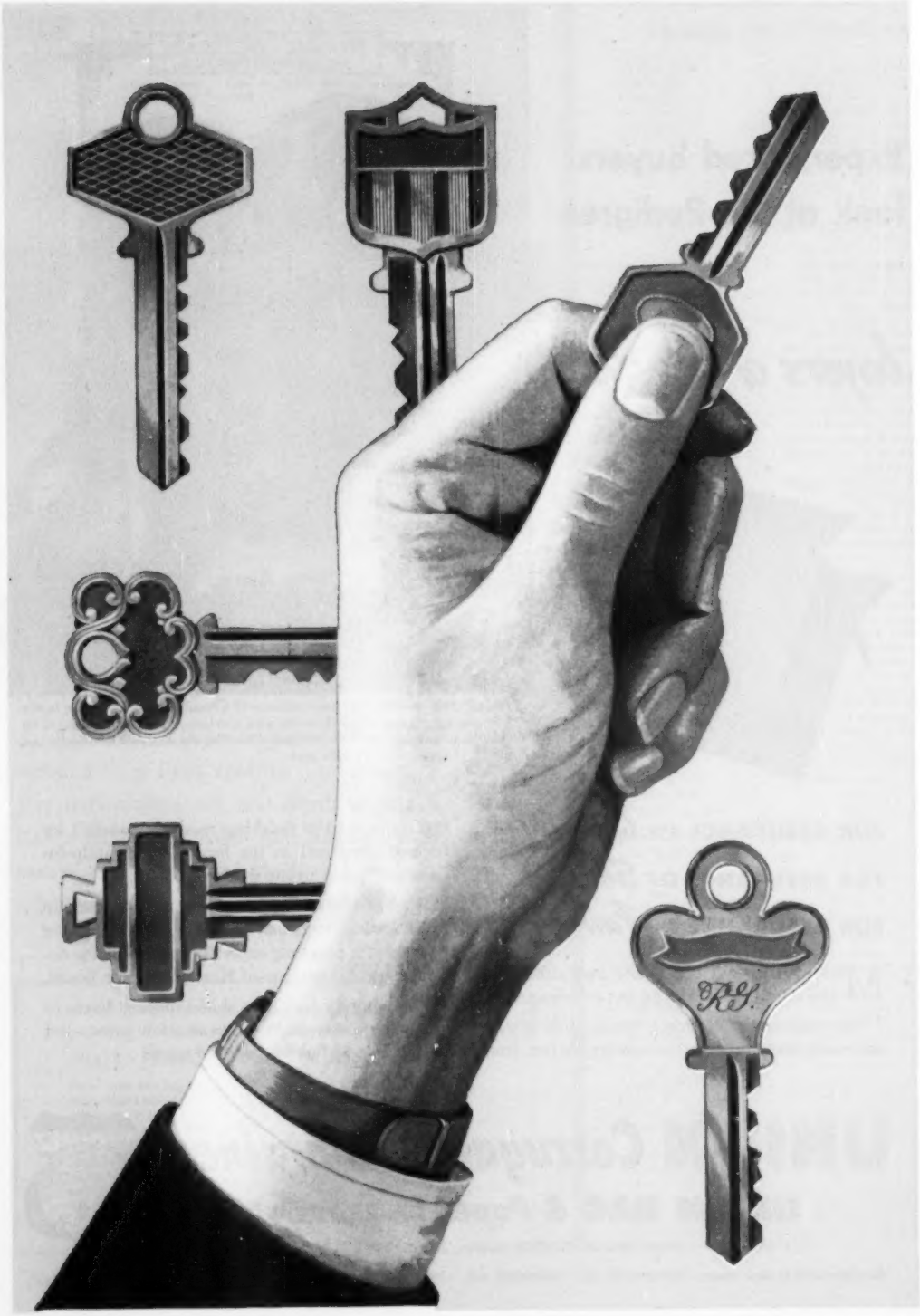
You can rely on Union shield-marked boxes to give you quality and service at a fair price—not only this year but for years to come!

UNION *Corrugated Containers*

UNION BAG & *Paper Corporation*

Principal Offices: WOOLWORTH BLDG., NEW YORK 7, N. Y.

Corrugated Container Plants: **SAVANNAH, GA. • CHICAGO, ILL. • TRENTON, N. J. • JAMESTOWN, N. C. (Highland Container Co., Inc.)**



Maybe this is just the one for you!

Our staff of able men—whose lives are devoted to solving "unsolvable" problems—may have the precise key to your present container problem *right now.*

If they haven't, they will devote their time to fashioning a key that *will.*

You see, the equipment and facilities available to our 310 highly skilled scientists and technicians are not surpassed in the industry. Nor is their record of achievement.

Canco customers have been out in front *first* with almost every new and better container—and frequently with an improved product within that container. And that's the record not just for this year. Or last year. But since the turn of the century.

Go first to the people who are first!

AMERICAN CAN COMPANY

CANCO

New York, Chicago, San Francisco; Hamilton, Canada

Here are a few special containers, developed by Canco, that have solved many marketing problems. If one of these containers doesn't ideally meet your requirements, we shall be glad to design a container that *does.*

In the Hall of Fame

The distinguished group of Mueller's window packages is one of the jewels in the Alford Cartons treasure chest of outstanding American packages.

Alford Cartons is proud of the part it plays in packaging for point-of-sale impact of Mueller's and many other nationally known products.

Alford Cartons

A subsidiary of Continental Paper Co.

Ridgefield Park, N. J.

Tremendous Trifles...

Look Best • Move Faster

Packaged in *Clearsite*

Plastic Containers That Sell!

There is an *endless* variety of products ideally suited to packaging in Clearsite *Plastic* Selling Containers. The list runs up and down the alphabet—from abrasives for industry to zany feathers for milady's hat—from zither strings to antibiotics. Sparkling-bright Clearsite lends itself to beautifully processed labeling. Gives your products a real sales boost. Write for descriptive literature on *Shatterproof, Featherlight* Clearsite Plastic Selling Containers. Place your products on DRESS PARADE!

Address Dept. C-2.

Clearsite ....is foresight

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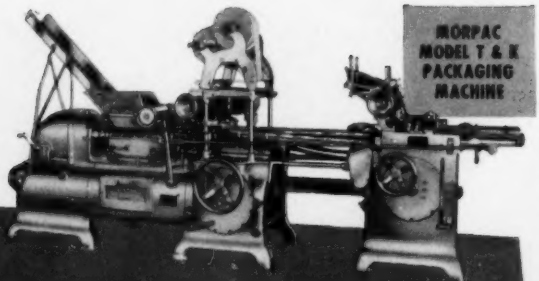
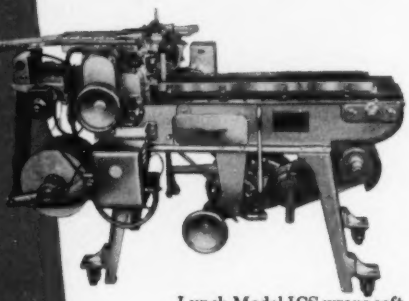


MORPAC MODEL T & K PACKAGING MACHINE

The Morpac Model T Print Forming and Wrapping Machine with K Cartoner gives continuous high speed production of butter, oleomargarine and similar products. Neat, accurate weight prints are automatically cartoned and come off the delivery end ready for shipment. A new Model Junior T MORPAC is now available to handle production not requiring the larger Model T.

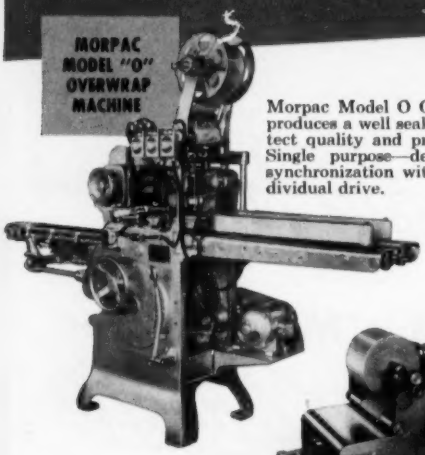
LYNCH PACKAGING... *better than ever!*



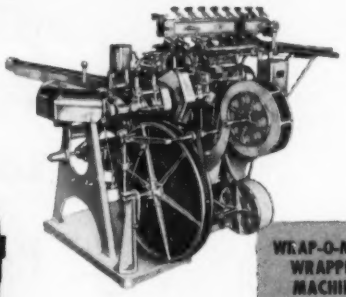
MODEL ICS ICE CREAM SANDWICH WRAPPER

Lynch Model ICS wraps soft sandwiches direct from freezer. A freezer man and two operators will finish pack 65 or more sandwiches per minute. Exceptional savings in packaging cost—requires small floor space—easy to operate and maintain—variable speed drive 30 to 120 packages per minute.

MORPAC MODEL "O" OVERWRAP MACHINE



Morpac Model O Overwrap Machine produces a well sealed package to protect quality and prevent weight loss. Single purpose—designed for either synchronization with Model 'T' or individual drive.



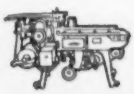
WRAP-O-MATIC WRAPPING MACHINES

MORPAC PAPER PACKAGING MACHINE

The fully automatic Morpac Paper Packaging machine is designed for use by paper mills, converters, tablet manufacturers, publishers and printers. It wraps or bands, ream paper, tablets, pads, loose leaf fillers, books and variety of rectangular objects.

Wrap-O-Matic fully automatic wrapping machine packages conventional confectionery and bakery products including fragile and irregular shaped items at high speed. Miscellaneous products now being wrapped include pencils, playing cards, cigars, etc. Optional equipment include automatic roll card or boat former and feeder.

PAR AIR COMPRESSORS



ICE CREAM SANDWICH WRAPPING MACHINES

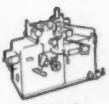
WRAP-O-MATIC CANDY & COOKIE WRAPPING MACHINES

LYNCH CORPORATION

PACKAGING MACHINE DIVISION

TOLEDO, OHIO

BRANCHES: NEW YORK • CHICAGO
SAN FRANCISCO • ATLANTA



MORPAC PAPER PACKAGING MACHINES

MORPAC BUTTER & OLEO PACKAGING MACHINES

GLASS FORMING MACHINES

EXPORT DEPT.: 13 East 40th St., New York 16, N. Y. • Cables: ARLAB

Here's a new name in packaging materials— IVITHENE . . . from a company with almost 15 years' experience in plastic extrusion

IVITHENE is polyethylene extruded in film, lay-flat tubing and heavy sheeting. It offers all the remarkable advantages of top quality polyethylene and has achieved wide acceptance as material for drum liners, multiwall bag liners, textile wraps, produce packaging and fabricated containers.

And it offers an important *additional* advantage—Irvington's extensive production facilities permit unusually *prompt delivery* to users—both large and small.

For information on characteristics, suggested applications and technical properties, just mail the coupon below for your copy of our IVITHENE booklet on packaging materials.

SEND THIS CONVENIENT COUPON NOW

IRVINGTON
VARNISH & INSULATOR COMPANY
28 Argyle Terrace, Irvington 11, New Jersey
Plants: Irvington, N. J.; Monrovia, Calif.; Hamilton, Ont., Can.

Irvington Varnish & Insulator Co. MP-2/53
28 Argyle Terrace, Irvington 11, N. J.

Gentlemen:
Please send me your 8-page booklet on IVITHENE packaging materials.

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My Name.....

Company.....

Address.....City.....

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PRESSURE SENSITIVE *ALL AT LOWEST PRICES*

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stop the eye . . . start the sale
pack to attract in maryland blue

Beauty is as beauty does . . . and the rich, colorful beauty of Maryland Blue Glass attracts the eyes and dollars of millions of shoppers. Blue stands out and says, "Buy Me!" Blue does double-duty as a container and a salesman . . . it acts as a powerful advertising, merchandising and selling tool. So dress your product in the style of many leading brands. Pack to attract in Maryland Blue. Write for samples today.

MARYLAND GLASS CORPORATION • BALTIMORE 30, MARYLAND

also available in clear glass

From the Gardner *Gallery of famous American Packages*

Quality

...IS NEVER A STAND-STILL WORD

Few products achieve a reputation for quality by standing still, by indulging in the luxury of self satisfaction.

As a matter of fact, quality *itself*, as every successful manufacturer knows, is a relative thing. There is only one way to keep it out in front.

That's why, here at Gardner, we believe in never being quite satisfied with a good job. We feel an obligation to ourselves—and to our customers—to do even better, tomorrow, what we have gained recognition for doing well, today.

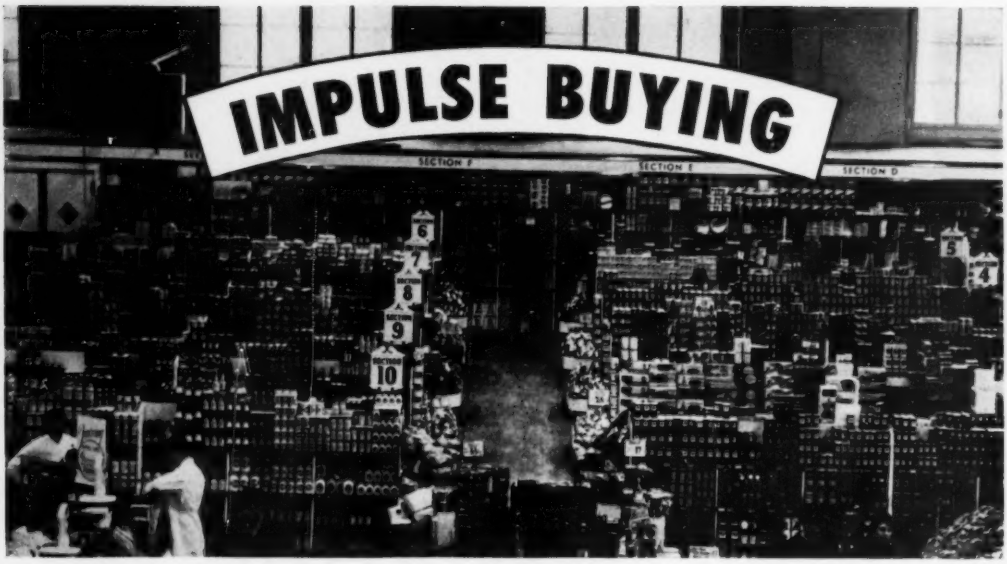
We think that's an important reason why you'll find so many of America's most famous products packaged in Gardner cartons.

THE GARDNER BOARD AND CARTON CO.

Manufacturers of Folding Cartons and Boxboards

GENERAL OFFICES: Middletown, Ohio—PLANTS: Middletown, Ohio; Lockland (Cincinnati), Ohio
Sales Offices in Chicago, Cleveland, New York, Philadelphia, Pittsburgh, St. Louis

GARDNER



YOUR PACKAGE should be the best Salesman you've got! Is it?

SOMEWHERE on dealer shelves your product must sell itself every day—every minute—your lithographed metal package must do it. It must attract that "impulse" buying. It may look good on your desk—but what about its competitive value on the counter or shelf of today's stores—where display space is at a premium? Heekin Cans beautifully lithographed with true, lasting colors can get that premium display space for your product. Heekin's exclusive high speed four-color lithograph presses offer you the most economical production in volume of lithographed cans. Whether you plan to buy cans now—or in the future—Heekin offers you fifty-two years of solid, sound experience—in production, in design, in merchandising.

HEEKIN 1901 52 Years of Service 1953

Lithographed CANS

THE HEEKIN CAN CO.

PLANTS AT CINCINNATI & NORWOOD, OHIO; CHESTNUT HILL, TENNESSEE; SPRINGDALE, ARKANSAS

DESICCITE 25 *

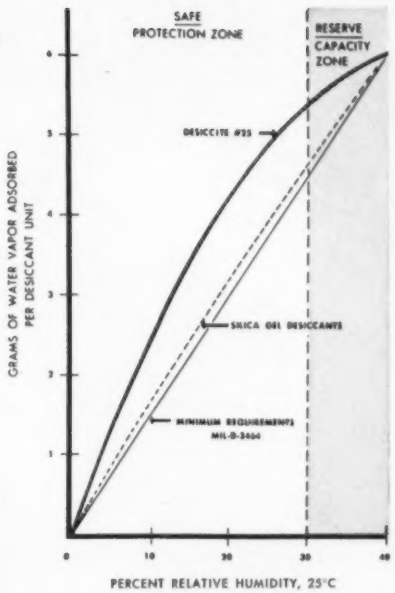
Desiccant for Method II Packaging **Under Specification MIL-D-3464**

A comparison of Unit performance is the only true and accurate basis for comparing packaging desiccants

For example, at 20% relative humidity a Unit of Desiccite #25 adsorbs over 43% more water than required by MIL-D-3464. The unexcelled adsorption capacity of Desiccite #25 over the entire protection range insures the lowest possible relative humidity inside the Method II package.

MANUFACTURED BY
DESICCANT DIVISION Filtrol CORPORATION

GENERAL OFFICES: 727 WEST 7TH STREET, LOS ANGELES, CALIFORNIA



Adsorption of water vapor by 1 Unit of Desiccite #25 compared with MIL-D-3464 and silica gel desiccant Units.

KNOW MORE ABOUT DESICCITE 25
WRITE FILTROL CORPORATION
OR YOUR NEAREST DISTRIBUTOR

Packaged Aristocrats!

Celanese* *Acetate* film gives your product a Selling-Plus!

Clear, sparkling acetate film can give your product a quick sales boost. This proven market-tested packaging demands attention . . . supplies the "take-me-home" look that makes sales easier, faster.

Just see how transparent acetate window boxes and overwraps keep these delicious grapes clean . . . protect them against handling . . . cut down loss from crushing . . . make them a year-round volume seller.

Celanese acetate film—always crystal clear, waterproof, smooth and unwrinkling—is doing this same hard-selling job for other foods, soft goods, and countless other products.

Ask your supplier immediately about low-cost acetate packaging—available in a wide variety of shapes, sizes, gauges and colors. Or write to

Celanese Corporation of America, Transparent Films Dept. 108-B, 180 Madison Avenue, New York 16, N. Y.

Canadian affiliate: Canadian Chemical & Cellulose Company, Ltd., Montreal and Toronto.

Celanese*

*Reg. U. S. Pat. Off.

PACKAGING FILMS

"Gems"

. . . IN VERSATILE METAL CONTAINERS

Personal Designs Our Specialty

40th Anniversary of Quality-Service

Quality **OLIVE CAN COMPANY** Service

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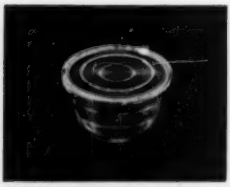
PLAIN • LITHOGRAPHED

METAL CONTAINERS

450 N. LEAVITT ST., CHICAGO 12, ILLINOIS

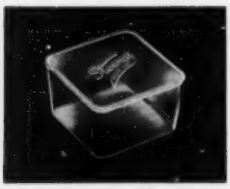
*Stoway** FULL PROFIT LINE



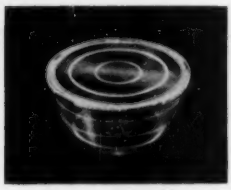
No. 2400 Stoway Twist-Seal Container—5 oz.—Crystal container with crystal, ruby, chartreuse, coral, grey lids.

No. 780 Stoway Trio Twist-Seal Set—5, 8 & 16 oz.—Nested in cellophane wrap. Crystal container with crystal, ruby, chartreuse, coral, grey lids.

No. 2600 Stoway Twist-Seal Container—8 oz.—Crystal container with crystal, ruby, chartreuse, coral, grey lids.



No. 600 Stoway Utility Dish—16 oz.—Crystal container with crystal, ruby, chartreuse, coral, grey lids.

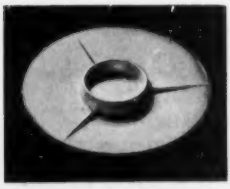


No. 2700 Stoway Twist-Seal Container—12 oz.—Crystal container with crystal, ruby, chartreuse, coral, grey lids.

No. 1200 Stoway Utility Dish—32 oz.—Crystal container with crystal, ruby, chartreuse, coral, grey lids.

No. 2800 Stoway Twist-Seal Container—16 oz.—Crystal container with crystal, ruby, chartreuse, coral, grey lids.

No. 800 Stoway Measuring Cup—8 oz.—Crystal only — heat resistant plastic.

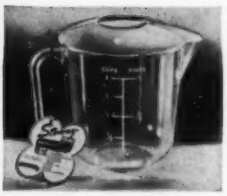


No. 1800 Stoway Service Dish—14" dia.—Solid red, yellow, green, coral, blue. Individually boxed.

No. 400 Stoway Dessert Cup—Crystal cup with ruby, gold emerald base.

No. 100 Stoway Utility Jar with Polyethylene lid—11 oz.—Crystal with frosted lid—Packed 1 doz. in 2 color display box.

No. 200 Stoway Utility Box—3⅜" x 7" x 1⅜"—Crystal box with crystal or ruby lid.



No. 900 16 oz. Stoway Measuring Pitcher—Crystal pitcher with solid red, yellow or green lids.

No. 925 16 oz. Stoway Measuring Pitcher without lid—Crystal only.

No. 300 Stoway Utility Box—5⅜" x 5¼" x 1 7/16"—Crystal box with crystal or ruby lid.

No. 930 Stoway Utility Pitcher and Lid—16 oz. in Red—Yellow—Green.

No. 1050 Stoway Utility Pitcher and Lid—48 oz. in Red—Yellow—Green.

No. 1000 Stoway Measuring Pitcher and Lid—48 oz.—Crystal Pitcher with Red, Yellow or Green Lid.

No. 1025 48 oz. Stoway Measuring Pitcher without lid. Crystal only.

WRITE OR WIRE FOR PRICES AND SHIPPING INFORMATION

SOUTHERN CALIFORNIA PLASTIC COMPANY

1805 FLOWER • GLENDALE • CALIFORNIA

. . . use DAREX Resin Emulsion Case Sealing Adhesive

Even when case bottoms get soggy or wet, they don't give way when they're sealed with DAREX Resin Emulsion Case Sealing Adhesive! This is *fact* — conclusively proved by leading breweries* that have thoroughly tested DAREX Resin Emulsion Case Sealing Adhesive *and are now using it commercially!*

DAREX Resin Emulsion Case Sealing Adhesive is applied by standard case-sealing machines. It has quick grab, with fibre tear in minimum compression time. Its high speed, high yield, plus reduced breakage, insure economy. *It is a proven better way to seal case bottoms!*

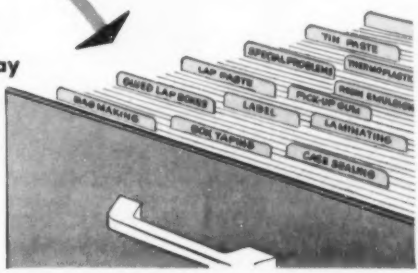
But don't take our word for it; test it yourself! Write for a generous sample that will show you, as words can never do, how you can save time, money and breakage with DAREX Resin Emulsion Case Sealing Adhesive!

*names furnished on request

DEWEY and ALMY
Chemical Company

Cambridge 40, Mass.
Chicago 38
Montreal 32, Canada
San Leandro, Calif.

The solution to *YOUR* adhesives problem may be in our files *NOW!*



AGAIN the choice is **US**

1943 Sterling Drug Inc. Installs *US* Model JK For Filling ZBT Baby Powder Cans in New Jersey Plant

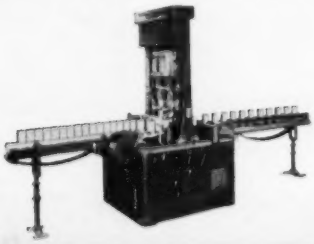
1952 Sterling Drug Mfg. Ltd. Installs Model JK For Same Operation in Ontario, Canada Plant

Sterling Drug Inc., manufacturers of ZBT baby powder, have used U. S. Automatic powder filling machines in their domestic plants for several years. Now they are using a U. S. Automatic Model JK automatic powder filling machine in their Sterling Drug Mfg. Plant at Windsor, Ontario.

The Model JK is a versatile twin station machine that fills with closest accuracy up to 60 containers per minute on all types of powdered and granular materials. Normally the operation of this automatic machine is to fill by packing under controlled pressure; for those materials that require settling a vibrating filling platform is furnished.

Machine operators praise the efficient dust collector hoods at the filling stations and the shut-off gates that eliminate drip at the augers. Connected to a vacuum system these keep the surrounding air free of dust and make the filling operation absolutely clean.

Add to these features, ease of change-over to handle several sizes of containers and you have a machine that is the last word in modern-high-speed powder filling. Write ***US*** for complete details.



the Model JK Fully Automatic Volume Filler, Weigher or Packer.

U. S. AUTOMATIC BOX MACHINERY CO., INC.

Owning and Operating NATIONAL PACKAGING MACHINERY CO. ★ CARTONING MACHINERY CORP.

122 ARBORETUM ROAD, ROSLINDALE, BOSTON 31, MASS.

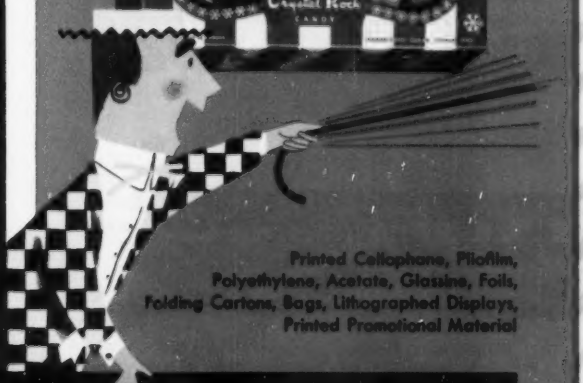
Branch Offices: New York ★ Chicago

Hot and Gross Weighing Package Forming and Filling Carton Sealing, Lining, Wrapping, Box Making

IN Milprint LITHOGRAPHED CARTONS...

"Candy does dandy...

Candy "shows off" in a handsome window carton—America's first window carton was produced by Milprint.



Printed Cellophane, Pliofilm, Polyethylene, Acetate, Glassine, Foils, Folding Cartons, Bags, Lithographed Displays, Printed Promotional Material

and liquor sells quicker!"

Cheerful gift cartons by Milprint add extra sales at holiday time and throughout the year.

With all apologies to Ogden Nash for revising his verse, it's true that *your* product, too, attracts more eyes and sells more customers when it's packaged in a colorful Milprint carton! That's because a Milprint carton combines sales-stimulating design and fine printing craftsmanship to create "sell-on-sight" package appeal.

Why not let Milprint lithographed cartons help move your product off sales counters faster! Call your Milprint man—*first!*

This insert lithographed by Milprint. General Offices, Milwaukee, Wisconsin • Sales Offices in Principal Cities

Milprint INC
PACKAGING MATERIALS
LITHOGRAPHY & PRINTING

McKESSON & ROBBINS tubes 16 varieties of products on their ARENCO fillers

IN THE BRIDGEPORT, Connecticut, plant of McKesson & Robbins, Inc., leading pharmaceutical manufacturer, Arenco Fillers are used to fill this amazing assortment of products into tubes. The tubes range in capacity from ¾ oz. to 4¼ oz., and the consistency of the creams and ointments varies from light viscosity to quite sluggish.

McKesson & Robbins is able to handle all these products on their Arencos because the machines can be completely cleaned in under 20 minutes, and tube sizes can be altered in 20 minutes.* Only stainless steel or resistant metals contact the products being filled. And all of these parts—including the stainless steel single cylinder pump—are easily and quickly demountable for cleaning and sterilization.

Arenco Fillers, with minor adjustments, will also fill jars, vials and ampoules. Even at speeds of 55 fills per minute, accuracy surpasses strictest commercial requirements. Maximum fill capacity is 250 cc (8¾ ounces).

The same quarter century old organization which maintains 2,000 other Arenco machines of all types in every part of the country services Arenco Fillers. Competent mechanics and complete stocks of spare parts are always on hand. The nearest Arenco representative can supply full details. Contact him now.

*Tube sizes can be changed in just 15 minutes on models now being delivered.

Hopper or filling head to fit product. No container, no fill. Automatic cleaning and cap tightening for tubes.

ARENCO Machine Co.
INCORPORATED
25 West 43rd Street, New York 18, N. Y.

Representatives

R. P. Anderson Co., 317 Texas Bank Bldg., Dallas 2, Texas
Tom McLay, P. O. Box #14, Port Deposit, Maryland
Packaging Equipment, Inc., 2013 Olive St., St. Louis 3, Missouri
Kruse Packaging Machinery, 5807 W. North Ave., Chicago 39, Ill.
Canada: Richardson Agencies, Ltd., 454 King St., West Toronto

It's NEW!

EXCELLOBRITE

...the flexographic ink for sparkling, high-gloss face-printing on cellophane

Now—with new BBD EXCELLOBRITE INK—you can print the *face* of cellophane . . . and get the same glossy, sparkling color effects as in reverse printing.

Thoroughly field-tested under actual operating conditions in converting plants, EXCELLOBRITE INK prints clean and sharp, lays uniformly, dries fast on all makes of *moistureproof heat-sealing, moistureproof anchor-coated* and *semi-moistureproof anchor-coated* cellophane, without bleeding in film plasticizers.

100% pigmented, EXCELLOBRITE INK has superior color strength and excellent printability . . . gives *up to 25% more mileage* than conventional cellophane inks. You can rely on it, too, for good adhesion, freedom from blocking even at 130°F. and 90% humidity, and working qualities that eliminate the need of frequent washups. All this *plus* high-gloss brilliance to match the sparkle of the film itself!

EXCELLOBRITE INK is "tailor-made" to run at your regular press speeds on any type of flexographic press — with smooth or metered inking rolls—and to meet other specific requirements. It is available in a full range of colors that are recommended as both first down and overprint colors. However, a big boost in gloss may be obtained even when *EXCELLOBRITE* is used only for the first down color and overprinted with our regular *EXCELLOPAKE INKS.*

On that next job, where the beauty of gloss printing is desirable but reverse printing is impractical, try new BBD EXCELLOBRITE INK.

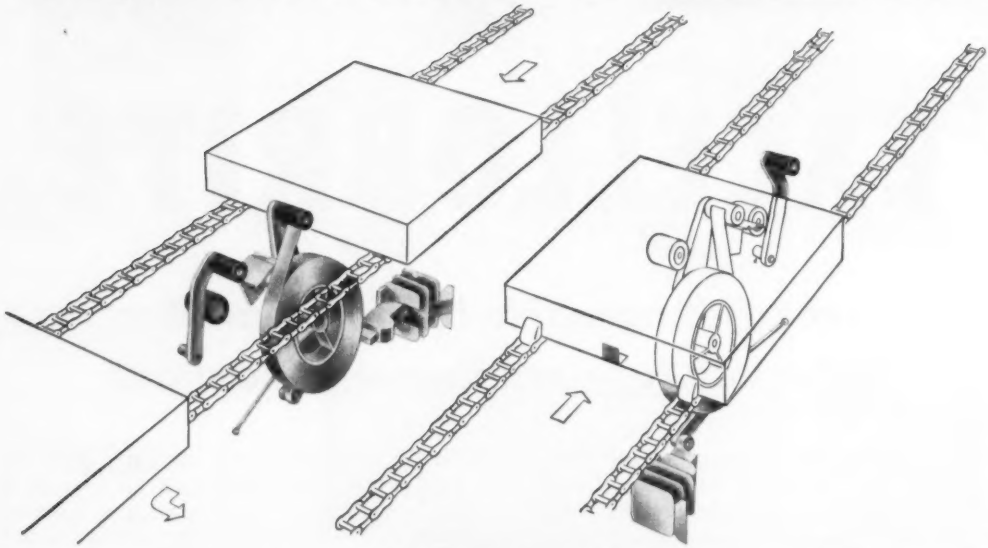
• For more information about high-gloss EXCELLOBRITE INK contact your nearest BBD office . . . or write to *Bensing Bros. & Deeney 3301 Hunting Park Ave., Philadelphia 29, Pa.*

GET BOTH FROM BBD

- **High-Gloss Cellophane Ink**
- **"Shirt-Sleeve" Technical Service**

Bensing Bros. and Deeney
SALES COMPANY
World's Largest Makers of Flexographic Inks
PHILADELPHIA • CHICAGO • WAKEFIELD, MASS.
Pacific Coast: A. M. BOJANOWER, Los Angeles
Export: McLAURIN-JONES CO., New York
Canada: MANTON BROS., Toronto

100% AUTOMATIC SEALING!

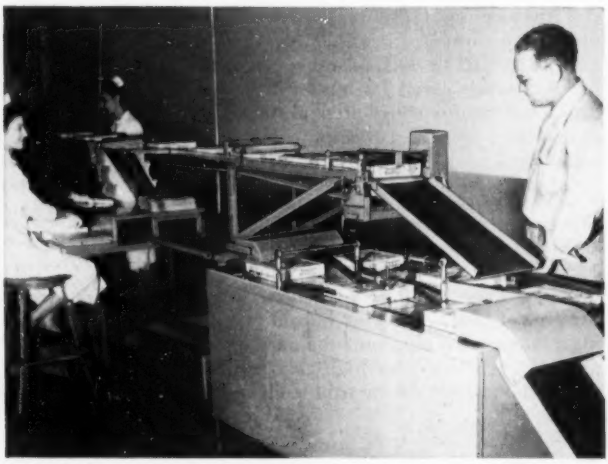


This simple unit makes a double saving for Welch Candy Co.

"String tying has long been a bottleneck in this department," says Raymond Cota, packing engineer for Welch Candy Co. "With these two sealers incorporated into our conveyor system, closure of cartons is now completely automatic."

Besides making a big saving in labor costs, the Welch Company proved that tape costs less, too. The twin strips of "Scotch" Brand red cellophane tape that seal each carton look better, hold tighter . . . and they actually cost less than the string formerly required!

This automatic unit can be made to double-seal up to 80 cartons a minute.



3M ENGINEERS worked closely with Mr. Cota (foreground) in developing this installation. They are ready to show you profitable new methods of banding, sealing, coding, reinforcing with tape. They will also suggest the right dispensers or help design special models. Write Dept. MP-23, 3M Company, St. Paul 6, Minn., and a representative will call on you promptly. No cost or obligation, of course.

Tape does it quicker, better, cheaper!

SCOTCH BRAND Pressure-Sensitive Tapes

The term "Scotch" and the plaid design are registered trademarks for the more than 200 pressure-sensitive adhesive tapes made in U.S.A. by Minnesota Mining & Mfg. Co., St. Paul 6, Minn.—also makers of "Scotch" Sound Recording Tape, "Underseal" Rubberized Coating, "Scotchlite" Reflective Sheeting, "Safety-Walk" Non-slip Surfacing, "3M" Abrasives, "3M" Adhesives. General Export: 122 E. 42nd St., New York 17, N.Y. In Canada: London, Ont., Can.

J.V.B—
Give this teletype
prior attention

FEB 10 1953

10:05 AM

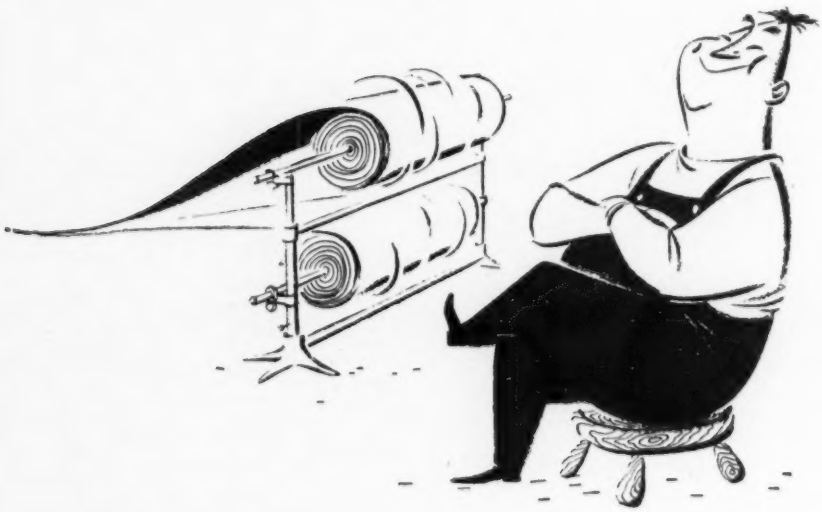
MSG 1

OPERATIONS BEGAN TODAY ON NEW 115 INCH GLASSINE
AND GREASEPROOF PAPER ~~MACHINEXXX~~ MACHINE AT
THILMANY PULP & PAPER COMPANY. THIS LATEST OF
OUR 8 PAPER MACHINES DOUBLES OUR PRODUCTION
OF GLASSINE AND GREASEPROOF PAPERS WHICH
WE HELPED PIONEER OVER 40 YEARS AGO.
STEPPED-UP PRODUCTION OPENS SUPPLEMENTARY SOURCE
OF SUPPLY FOR NEW ACCOUNTS AND MAKES AVAILABLE
ADDITIONAL TONNAGE FOR OLD ESTABLISHED CUSTOMERS.
NEW GRADES WILL PROVIDE EXCELLENT GREASEPROOF
PROTECTION ~~SXXX~~ FOR ALL TYPES OF PRODUCTS AT
SUBSTANTIAL SAVINGS IN COST OVER MANY OTHER
PROTECTIVE FILMS AND COATINGS.
COMPLETE DETAILS. SAMPLES. ETC.. AVAILABLE FROM
THILCO OFFICES AT NO OBLIGATION. WHY NOT WRITE
TODAY.

Better get in touch
with these people
immediately
HJK

THILMANY PULP & PAPER CO.
KAUKAUNA, WISCONSIN
DETROIT • CHICAGO • NEW YORK • MINNEAPOLIS

are YOU cutting the automatic way?

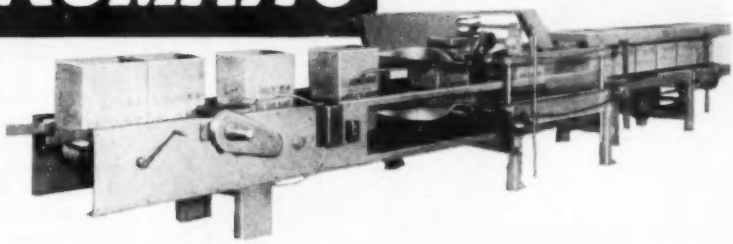


No matter what material you work with . . . cellophane, paper, cardboard, felt, plastic, duck . . . as long as it's cut from rolls . . . you'll profit by using a Beck Automatic Roll Sheet Cutter . . . takes the problems out of cutting. Why not investigate NOW . . . just ask for a Catalog!

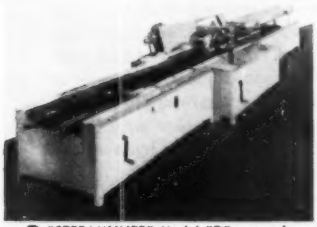
CHARLES BECK MACHINE CORPORATION
406 N. 13th Street BECK Philadelphia 8, Pa.

LOAD, GLUE, SEAL and IMPRINT YOUR CORRUGATED SHIPPING CASES WITH PACKOMATIC

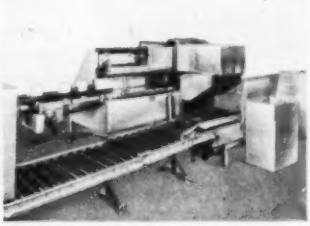
Share the *know-how* to which America's foremost packaged goods manufacturers turn for modern, *automatic* PACKOMATIC fibre shipping case packing, gluing, sealing, dating (coding) and imprinting equipment. *Coupon below will speed information.*



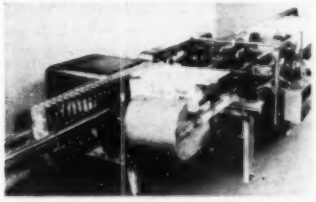
1 Model "D" shipping case gluer-sealer for high speed, moderate or slow production lines. Automatically applies wide variety of glue spreads. Handles both light and heavy corrugated or solid fiber containers. Adjustable for wide variety of case sizes and weights.



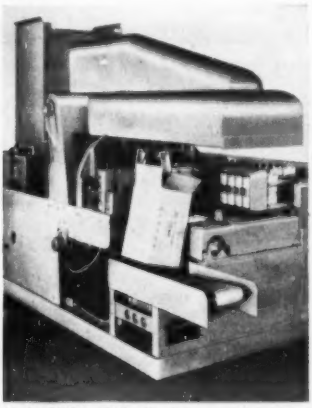
2 "STREAMLINER" Model "D" case gluer-sealer for food, dairy and beverage operations open to public.



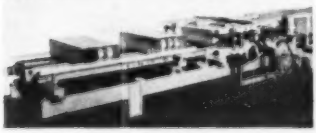
5 PACKOMATIC shipping case loader automatically packs filled cartons into cases and starts them on their way to gluer-sealer unit.



3 COMBINATION END LOADER-SIDE SEALER takes round or rectangular packages, assembles and loads them into cases previously squared and registered.



6 PACKOMATIC shipping case former-packer delivers up to 1200 *loaded* shipping cases per hour, *automatically.*



4 SIDE GLUER-SEALER for cases going through in *horizontal* position such as end-open, tall and narrow cases with overlap as well as regular butt flaps.

Turn to PACKOMATIC'S nearly 30 years of helping America's foremost package merchandisers reduce production costs, keep resale prices in line, and step-up earnings with *modern, automatic* packaging —from carton forming and filling, to shipping case loading, sealing and imprinting. PACKOMATIC *automatic* packaging equipment includes:

CASE PACKERS & SEALERS
CASE IMPRINTERS
CARTON FILLERS & SEALERS
VOLUMETRIC FILLERS
CARTON MAKING MACHINES
DATING (CODING) DEVICES
PAPER CAN FORMING & FILLING MACHINERY

Preserve and protect the shelf appeal of your packages with *modern, automatic* PACKOMATIC packaging machinery. Save time... floor space... labor... money!

★ ★ ★

Regardless of the size or scope of your operation, your inquiry incurs no obligation to purchase. Write J. L. Ferguson Company, Route 52 at Republic Avenue or phone Joliet 6275.

T. M. REG. U. S. PAT. OFF.

FOR LOWER PACKAGING COSTS TOMORROW... MAIL COUPON TODAY

PACKOMATIC
PACKAGING MACHINERY
J. L. FERGUSON CO. JOLIET ILL.

Chicago • New York • Boston • Baltimore • Cleveland • Denver
New Orleans • San Francisco • Los Angeles • Seattle • Portland • Tampa

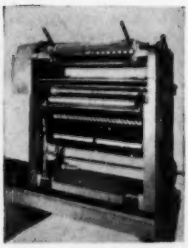
J. L. FERGUSON CO.
Joliet, Illinois

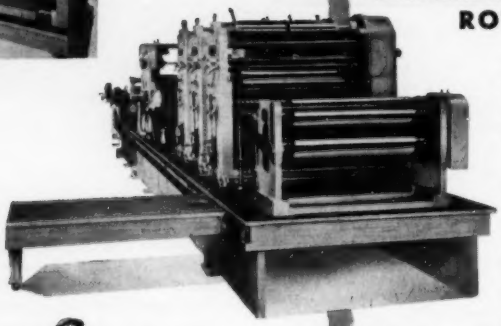
Please send complete data on ☐ Case Sealing ☐ Carton Filling and Sealing ☐ Package Weighing Equipment.

Company_____

Address_____

City_____ State_____





No Down Time

with this new heavy-duty, high-speed ROTARY LETTERPRESS

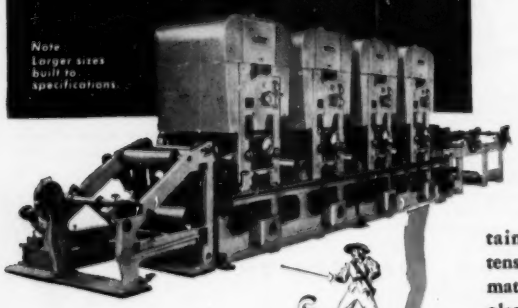
Champlain's new high-speed, heavy-duty Rotary Letterpress permits wash-up, plate changes, and set-up for the next run without press down time.

Individual color units, mounted on roller casters, are easily extracted from normal printing position to a traveling auxiliary bed permitting wash-up, plate changes, etc. while other units are running. Press sizes 26", 31", and 36". Designed with minimum/maximum printing range to meet customer's specifications. Equipment is available with from one to seven color units. Both engraving and impression cylinders can be removed for size change without disturbing press frames or inking mechanism. Write for complete information.

7462

	8"	14"	20"	26"	36"	44"
Max. print. width	8"	14"	20"	27"	36"	44"
Max. Web. width	9"	15"	21"	28"	37"	45"
Min. Cyl. Circum.	9"	9"	13"	17"	17"	17"
Max. Cyl. Circum.	18"	18"	26"	34"	34"	34"
Production speed (with rewound roll delivery)	Up to 750 feet per minute depending on stock					

Note: Larger sizes built to specifications.



Finest Quality

multi-color rotogravure at higher speeds

The standard Champlain Rotogravure Press assures precision registration at high speeds by electric push-button control or automatically by Champlain electric eye control. Highly volatile, fast-drying inks may be used thanks to Champlain's patented "Speedry" fully enclosed ink fountain. Hydraulically controlled constant web tension from unwind through to rewind is automatic. Paper, board, cellophane, pliofilm, foil, glassine are handled with ease, and coatings, varnish, metallic and gloss inks as well as standard gravure inks may be used. Send for complete details on top quality printing at highest speeds.

7451

CHAMPLAIN COMPANY, INC.

88 LLEWELLYN AVENUE, BLOOMFIELD, N. J.

CHICAGO OFFICE: 520 N. MICHIGAN AVE., CHICAGO 11, ILL.

Champlain manufactures a complete line of rotogravure, aniline, rotary letterpress and allied equipment for packaging and specialty printing.

It's smart to stick with Swift's Adhesives

They serve you and the grocer, too!

In modern, self-service merchandising—where eye appeal often makes the sale—Swift's Adhesives serve successful manufacturers in many important ways. For example, they keep packages neatly sealed . . . maintain the appearance of paper products . . . provide a lasting bond for labels on bottles, jars and cans.

When you need adhesives, always remember—

- Swift has years of specialized experience in adhesive production.
- Swift works with a broad range of quality raw materials.
- Swift has extensive adhesives manufacturing facilities . . . distribution points from coast to coast.

Two adhesives for packaging operations:

Swift's Liquid adhesive for top and bottom sealing, tite-wrap work. Fast setting, clean machining, non-warp type.

High Speed Case Sealing Adhesive—designed for both high speed machine and hand application. A Dextrin adhesive with extremely fast set and clean machining.

Faultless Starch Company, Kansas City, Mo., uses Swift's Adhesives for top and bottom sealing —to keep Faultless Starch Cartons neat and attractive at the point of sale.

Call **SWIFT** first for **ADHESIVES**

Swift & Company
Adhesive Products Department
Chicago 9, Illinois

This offer expires Mar. 31, 1953

Please send your 100-lb. introductory trial shipment of:

☐ Swift's Top and Bottom Adhesive
☐ Swift's High Speed Case Sealing Adhesive

At the quantity price

These will be tested for use in our operations. We understand, if not fully satisfactory, they may be returned for credit at your expense.

Name _____ *Title* _____

Firm name _____

Address _____

City _____ *Zone* _____ *State* _____

Why This One?

CUSTOM PACKAGING CREATES BRAND PREFERENCE FOR MOST ANY MEDICINE CHEST PRODUCT

THE consumer confidence, at point of sale, that is created by the *appearance* of quality is second only to the *fact* of quality in the ethical drug and other products filling America's medicine chests. The best, easiest, and even most economical way of insuring packages that all but guarantee high quality contents is to use fine, clay-coated, *custom-made* boxboard. As the leading manufacturer of it, Ridgelo is naturally first-choice source for the boxboard carton needs of leading manufacturers in these fields.

Ridgelo CLAY COATED REG. U.S. PAT. OFF. BOXBOARDS

Custom Made

MADE IN RIDGEFIELD, N. J. BY LOWE PAPER COMPANY

- Absolute uniformity, re-order after re-order.
- Perfectly sized surface, for finest printing.
- Choice of customized finishes and coatings.
- High brightness, gloss, and economical printing.

Representatives

H. B. Royce, Detroit
Philip Rudolph & Son, Inc., Philadelphia
A. E. Kellogg, St. Louis
Norman A. Buist, Los Angeles

art for sales sake . . .

fisher's foils

FISHER'S FOILS LIMITED EXHIBITION GROUNDS WEMBLEY MIDDLESEX ENGLAND

TELEPHONE WEMBLEY 6011 CABLES LIONNIT WEMBLEY ABC CODE 6TH EDITION

Throughout all stages of manufacture, every roll of foil made by Fisher's is *automatically controlled* for gauge consistency by the latest beam gauge. Send today for wide range of samples or ask our representative to call.
fisher's
foils

Glamour For Sale

OLD DOMINION boxes for America's most glamorous hosiery! They illustrate the flair and ability which are yours when you select the *"Southern Box Maker with a National Reputation"* for packaging achievement.

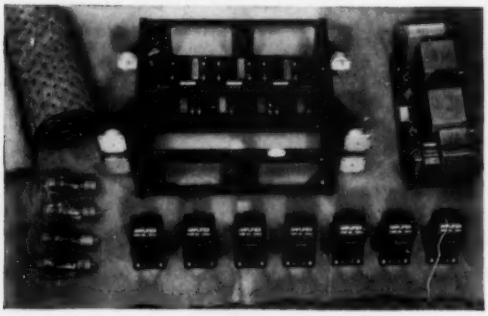
OLD DOMINION Box Company Inc.

PLANTS LOCATED THROUGHOUT THE SOUTH

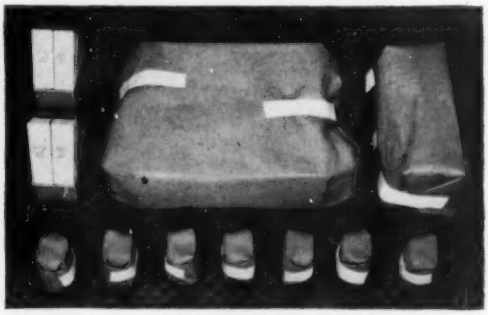
Executive Offices: LYNCHBURG, VA. • *Sales Offices:* CHARLOTTE, N. C.

THE SOUTHERN BOX MAKER WITH A NATIONAL REPUTATION

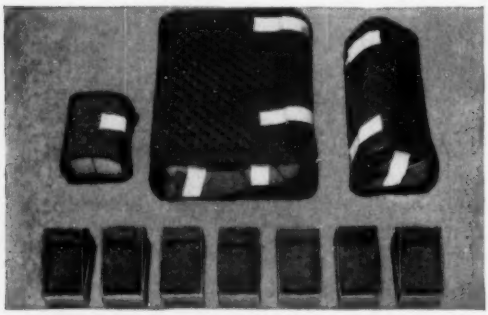
Custom Protection—prevents shipping damage to military products as no other packaging method known!



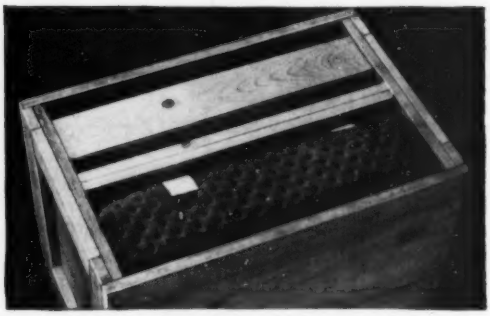
1. Assembly of parts of Amplifier Unit and all materials used in packaging.



2. Each part (except 4 boxed tubes) is wrapped in Grade A paper and tape sealed.



3. Each part is over-wrapped with Dimple Embossed KIMPAK, including 4 boxed tubes.



4. Completed assembly is inserted in wooden box for overseas or domestic shipping.

In the shipment of vital defense and military supplies, the use of sound packaging methods is a definite requirement. So to meet rigid government standards, many companies are again—as in World War II—turning to Kimberly-Clark Interior Packaging—KIMPAK.* This modern packaging material of unlimited versatility can be "tailored" to fit the needs of every type of product—is designed to protect against the most extreme shipping hazards.

KIMPAK is soft, strong, grit-free—easy to apply as wrapping paper. It cushions delicate electronic instruments against shock and vibration—protects finely finished surfaces against scratching and pressmarking. Certain specifications absorb up to 16 times their own weight in moisture; others resist liquids, or insulate against temperature changes. KIMPAK is feather-light, too, yet gives more protection than most materials of far greater weight and density.

Whatever your shipping problem, there is a specification of KIMPAK designed to do the job best. Start giving your military supplies *custom protection* with KIMPAK—it's the safe, modern way to prevent shipping damage. For our free booklet "Military Packaging," or further information, write Dept. L-23, Kimberly-Clark Corp., Neenah, Wis.

KIMPAK INTERIOR PACKAGING

A Product of **Kimberly-Clark**

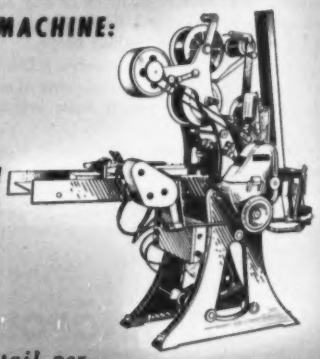
*T. M. REG. U. S. & FOREIGN COUNTRIES

Photos courtesy Servomechanisms, Inc., Westbury, L. I., N. Y. Product shown—Co-ordinate Converter Amplifier Unit.

FROM HEADACHES

SINCE THE BAYER COMPANY DIVISION TURNED TO SCANDIA AUTOMATIC BUNDLING MACHINES

YOUR PRODUCT, TOO, DESERVES THE BENEFITS OF THE *SCANDIA* AUTOMATIC BUNDLING MACHINE:



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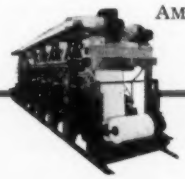

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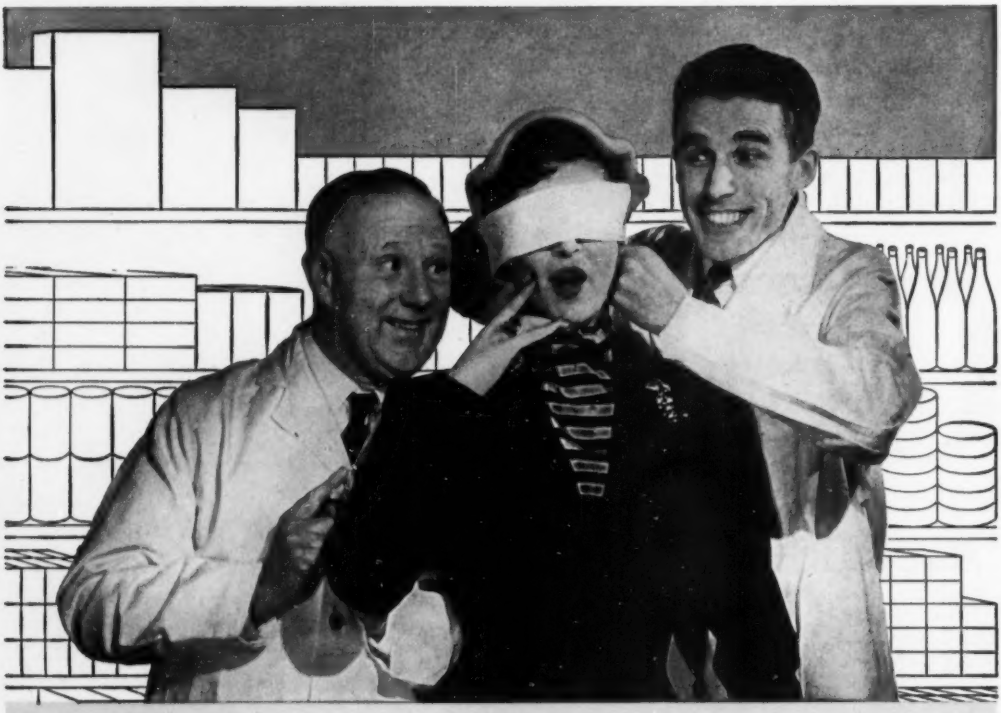

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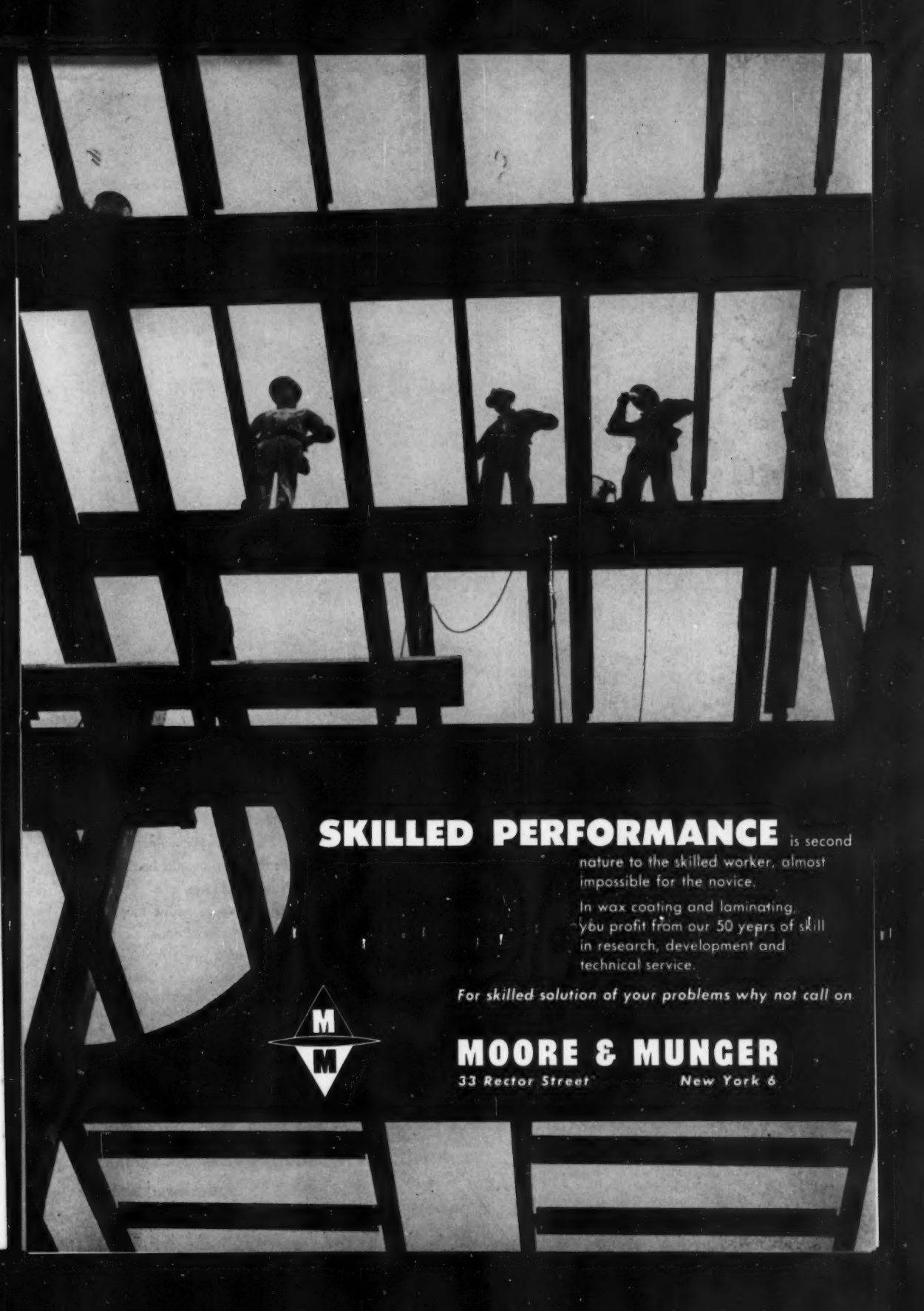

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VOLUME 26
NUMBER 6
FEBRUARY 1953

Modern packaging

IN BLUEPRINT LIBRARY Ralph H. Thomas, Bristol-Myers package engineer, examines design of a container. Library provides ready access to engineering drawings of all company packages.

THE PACKAGE ENGINEER

What does he do? An illuminating answer is provided by this example from Bristol-Myers

It is one thing for a packager to employ a designer to make a dummy of a desired package. It is quite another to engineer the package for mass production at the high speeds and uniform quality demanded by modern industry.

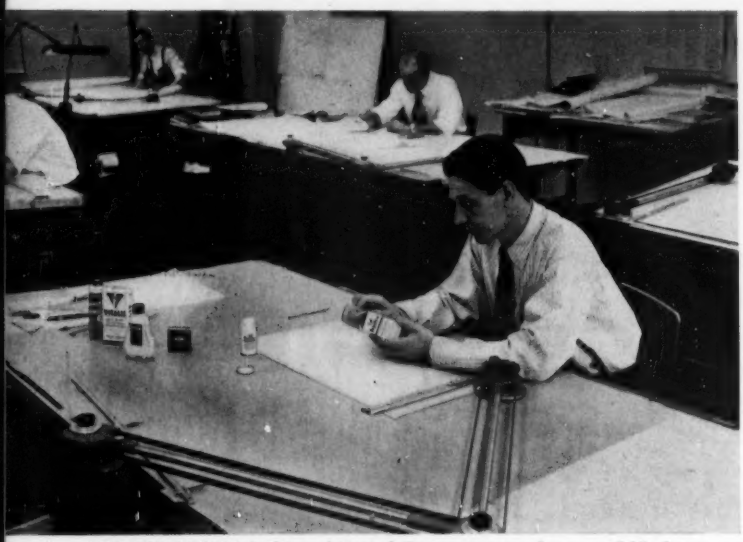
The continually increasing numbers of package forms and the ever-growing need for mechanization are making package engineering a highly specialized science. No longer in large firms is the complexity of packaging problems solely the responsibility of purchasing, production and maintenance men. The best kind of team work is required, for instance, to cope with the intricacies of a valve for an aerosol container, the development of a coating to be used on a collapsible tube or the layout of equipment needed to fill a polyethylene squeeze bottle.

Package engineering today supplies a high type of inventive skill for development work to complement regular production and maintenance routine.

One of the interesting trends of the last decade is indicated by the increasing number of firms which have set up package engineering as a separate engineering activity. Much of the work involves experimental study in new containers or the development of mechanical devices to effect more efficient production procedures.

Where such departments have been

CONTAINER FILE is kept for all of Bristol-Myers 102 items, classified by products, as shown by this Ipana tooth-paste collection.



DRAFTING-ROOM facilities of Central Engineering are always available for drawing up required recommendations from any department.

successfully set up and run, there are almost unanimous reports of substantial savings that help to reduce mounting operating costs. One company says its savings through developmental package engineering have run into seven figures over a six-year period.

The best use of specialized package engineering is achieved if the package engineer takes part in package planning from the inception of a new package or package change. Development work may go on simultaneously with the over-all planning. Much assistance may be given by engineering in helping to meet time schedules and to avoid disappointments that might otherwise be caused by mechanical difficulties.

As soon as a new product development department determines that there is a market for a particular item, the package engineer can be furnished with all the data compiled by research, sales and advertising departments as to the package requirements of the product. The function of engineering is to "build" the package and assist other departments in finding the way to make it in quantity within—or for less than—the specified budget. How this is done often helps to determine the margin of profit a product can bring to a company.

The package engineer has an opportunity to study and suggest whether new types of package forms or supplies are required; whether the package can be produced on existing machinery or will require new equipment. He often can set up a pilot operation in the laboratory to determine efficiency without tying up production on developmental work. With this test experience he is in a position to assist production in the planning of full-scale operation and maintenance.

In some companies the package engineer keeps a file of information on all the company's packages and packaging equipment, and thus can supply data quickly on the possibilities for production—the transfer of machinery from one division to another; the mechanical equipment that must be purchased or designed for a certain job. He should have a thorough knowledge of every package from inception through its entire commercial life.

An outstanding example among the growing number of well-organized package engineering divisions today is that of the Bristol-Myers Co. at Hillside, N. J.

In 1946 Bristol-Myers established a Central Engineering Department to service more than 30 manufacturing plants of the company both in the United States and abroad. This meant that all engineering problems for some 102 items were to clear through this centralized unit, housed in a modern, fully equipped new building in Hillside, completed in 1947. Director of engineering is John H. Fridén, vice president of the Bristol-Myers Co. Of the 11 staff engineers, one was assigned exclusively to packaging problems.

The building houses offices, a drafting room, a machine shop with the most up-to-date equipment, a special laboratory for working out packaging problems and a library

covering all engineering subjects.

One of the first objectives of the package engineer was to establish a complete library of packaging information. It includes:

1. A blueprint room in which may be located an engineering drawing of every package that has been produced since Central Engineering was organized.

2. File samples of all packages and all modified versions to date, classified by product divisions.

3. A record of all Bristol-Myers machinery and equipment, kept up to date with every new purchase, for the benefit of requesting divisions.

4. A file of information on all types of packaging machinery offered by manufacturers, classified according to type and usage, and accompanied by the latest manufacturers' literature and clippings from technical and trade publications.

5. A general file of all standard engineering reference material.

When a packaging job originates, the package engineer has immediately at his command through Central Engineering:

1. Complete background information on materials and equipment.

2. Drafting facilities for drawing up the necessary design and recommendations.

3. A machine shop for constructing models or adapting mechanical equipment to the job.

4. Laboratory facilities for making necessary tests on packages under consideration and for the construction and operation of pilot models.

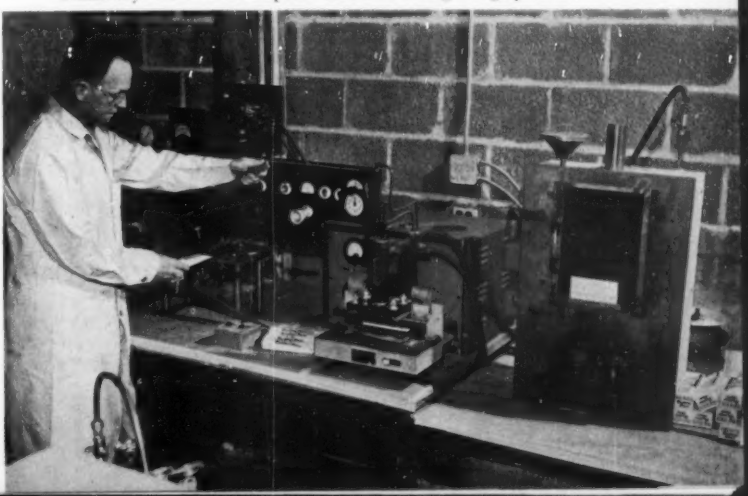
Depending on the recommendations and the selection of the package, the packaging engineer is thus ready to work with each product division in building the desired package and effecting machinery and equipment changes to handle the new or revised package. If necessary, he can recommend a new layout of equipment for improved handling.

At Bristol-Myers the man in charge of these interesting assignments is Ralph H. Thomas. A summary of his experience indicates his specialized background in package engineering. Mr. Thomas was trained in mechanical engineering at Johns Hopkins and Rutgers universities. During the war he served in the overhaul and repair service center of the Management Division of the U. S. Naval Air Corps, Pensacola, Fla. Later he was a methods engineer for the Hoover (vacuum cleaner) and International Telephone & Telegraph companies. Previous to joining Bristol-Myers four years ago, he worked as a civilian in the packaging and development engineering service of the U. S. Naval Bureau of Aeronautics. And the education required for a job like this seemingly never ends. Mr. Thomas right now is continuing special studies in plastics development engineering in night classes at Newark College of Engineering.

He is a familiar person in all divisions of the company, for his work puts him in contact with most depart-

MACHINE SHOP housed in Central Engineering building contains most up-to-date equipment. Copy machine illustrated in foreground will automatically reproduce any cylindrical object in metal.

LABORATORY has complete facilities for testing and building pilot apparatus. Left to right: hand-operated device for making crimps on collapsible tubes; pilot model of electronic high-frequency tube sealer similar to one now used on Vitalis and Mastitis tubes; pilot apparatus for dispensing wax coating automatically on inside of collapsible tube ends during filling operation.



ments. He talks with Sales, Advertising and Merchandising. He reports to the Packaging Committee, checks with Quality Control, looks in on Product Research. He keeps in touch with pilot-plant operations, supervises work in the package-engineering laboratory, inspects machines in Production and worries over costs with the Accounting Department.

A part of his study in each case is, of course, a correlation of Bristol-Myers packages with all competitive packages so that advantages and disadvantages may be fully evaluated. In several instances such study has been most advantageous in helping the company either to improve a package or adopt one with certain features which greatly increased its sales appeal, competitor-wise.

The package engineer is represented at most Packaging-Committee meetings, keeps aware of packaging problems in all divisions and is thus able to recommend to one division methods and production equipment which have been advantageously used by others. His familiarity with mechanical production in each division enables him to be of valuable service to all divisions.

Another function of package engineering at Bristol-Myers is a continuing study to meet future trends in container styles or to meet emergencies which may arise from materials shortages. In the laboratory, for example, one may see pilot apparatus for the production of paper tubes, or experiments under way with wood, walnut shells and cotton flock as possible fillers for plastics.

A review of several case histories discloses typical achievements since the inception of Bristol-Myers specialized package-engineering activity. It reveals not only the accomplishment of better packages and more efficient operation, but the unusual opportunities for the discovery of advanced ways of doing things that arise when engineers are given an opportunity to use their creative ability in solving the hundreds of problems that arise every day in mass-production packaging.

Typical of the requests are those concerned with reducing costs. For example, the management was disturbed at the high cost of hand cartoning small sample tubes of Ipana tooth paste in small plant operations where it was not economical to try to tool up a regular production cartoning machine for the job. A capable operator could carton by hand only 10 to 15 per minute. A small, semi-automatic machine might reduce this high cost and improve the quality of the cartoning operation. Engineering designed a small, one-operator machine capable of cartoning 30 of the sample packages a minute. The machine's total cost of approximately $1,500 was soon made up by labor savings and by its use, complete control of the quality of the cartoning of sample tubes of Ipana tooth paste was achieved on schedules more accurately kept.*

SEMI-AUTOMATIC CARTONER built by Central Engineering cut hugs out of hand-packing small sample tubes of Ipana tooth paste, improved quality of cartoning and permitted more accurate scheduling. Operator sets up cartons, inserts tube. Machine folds flaps as shown by this close-up view.

At another time a request came to the package engineer for help in reducing costs of a tableted product. Working with procurement and production associates, engineering was able to suggest changes in caps, bottles, labels and methods that reduced costs 21%.

For the old package, the product accounted for 33% of the total cost, packaging material amounted to 56.8%, and labor and overhead accounted for 10.2%. For the new-style package, product accounted for 31.7%; packaging material, 37.6%; labor and overhead, 9.5%, making total cost 78.8% of the cost of the old package and thus saving 21.2%.

Bristol-Myers package engineering originally developed one of the two glass aerosol packages recently brought to the attention of the packaging world as a means of pressurizing products that are corrosive to metal and cannot be handled in conventional aerosol cans. This came about as a result of the company's search for a suitable aerosol container for a new antiperspirant. All types of metals and organic coatings on metal were tested without licking the corrosion problem. The Bristol-Myers engineers then turned to glass, developed one of the first entirely non-metal aerosol valves and overcame the pressure-breakage problem inherent in glass by coating the entire outer surface of the bottle with a plastic so that, in effect, they had a glass bottle within a plastic bottle. This development project was carried to the point of specifying filling and pressurizing equipment. The bottle itself now awaits commercial production by one of the glass companies,

* Machine has been made available to other users through Wm. B. Sanford, Inc., 601 W. 26 St., New York 1, N. Y. (See MODERN PACKAGING, June, 1950, p. 158.)

which has purchased manufacturing rights.†

The kind of pilot operation that can be worked out in the package-engineering laboratory is illustrated by a problem encountered with Ipana tooth paste export tubes, which in some climates abroad developed leakage and corrosion at the crimp end due to humidity and heat. Package engineering was asked to correct this without a substantial increase in cost and, perhaps, with equipment that could be handled within present production facilities. Studies were made of many types of organic coatings, waxes and dip arrangements for the crimp end. Some were found that would do the job, but operation would have required a separate cycle. In the laboratory, package engineering designed a pilot apparatus wherein the wax selected would dispense automatically on the inside of the tube end during the filling operation and be crimped in during the regular crimping operation. From the pilot apparatus, the procedure was adapted to normal production with no extra cost except for the trifling amount represented by the materials used.

To demonstrate the possibilities of a high-frequency electronic sealer for fusing metals and sealing fluoro-carbon plastics, the packaging engineers built a pilot sealer which became the model of the present high-frequency electronic sealer now used for Vitalis and Mastitis tubes.

In its search for more economical methods of labeling irregular-shaped bottles, Bristol-Myers package engineering has done some of its most interesting experimental work in devising a method for applying labels by photographic means. In this procedure a master negative is made which serves regardless of the size of the label. By photographic means, the negative is projected on to the bottle on the conveyor line. The bottle, which has been treated with a photographic emulsion which is a component of a coating that imparts shatterproofness to the glass, picks up the positive impression. The bottle is then processed on the conveyor line through photographic developing and washing stages. The finished product is said to show an accurate, clear printing directly on the bottle—although at the present stage of development it produces only one color and contrasts in tone are not so pronounced as are possible with current types of already commercially accepted applied-labeling processes. The process also might lend itself to the projection of actual photographs on bottles. A sample of one of these experimental labels is shown in an accompanying illustration. The cost of the process is reported to be reasonable on a large-volume production basis and indicates excellent possibilities for handling easily a wide variety of sizes on a wide range of bottle shapes. The process is far from perfected, as the sensitized bottle surfaces must move in "dark-room" tunnels until developed, but again the project shows the possibilities when inventiveness is given a free rein.

The problems of Bristol-Myers package engineering are as varied as the 102 items produced in the company's many plants. One day a request may be for the development of a machine for filling shaving cream for a European market; the next it may be to produce a pocket-size, non-breakable, light-weight plastic container which will protect a hygroscopic product, yet be inexpensive and attractive in appearance. Or the problem may be the perfection of a closure for penicillin powders in a glass bottle. The requests come from all divisions of the company and from every geographic area. When it is an equipment problem, the packaging engineer is ready

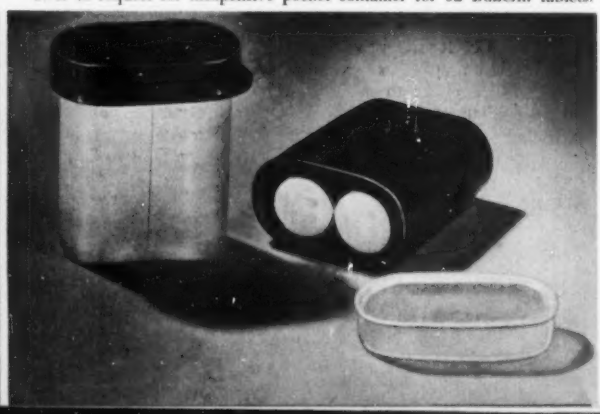
(*This article continued on page* 197)

† This proposed package should not be confused with the Larvex glass aerosol, described in "The First Glass Aerosol," MODERN PACKAGING, Jan., 1953, p. 90, which was an independent development of the Zonite Corp. and its suppliers.

PHOTOGRAPHIC LABELING is one of the possibilities Bristol-Myers engineering is investigating. Photo shows experimental label on Vitalis bottle, used in tests because of flat surface. Label is projected on bottle by master negative right on conveyor line. Bottle surface is treated with photographic emulsion which is component of coating that imparts shatterproofness to glass.

SIZABLE SAVINGS are represented by new Bufferin package through package engineering's recommendation for different-style bottle, cap and label.

CREATIVE DESIGN aspects of package engineer's job are illustrated by molded polyethylene containers developed by Central Engineering in answer to request for inexpensive pocket container for 12 Bufferin tablets.



NO SHIFTING of stockings is possible when they are held by vacuum in the package—eliminating objections to previous types of presealed transparent-envelope types of packages. The almost letter-thin package of individual pair has a convenient tearing notch for opening.

Vacuum-packed hosiery

Gotham's new plastic-film pouch for nylons may be the answer to a successful presealed stocking package

For years the nylon hosiery industry has been searching for something more than the conventional hosiery shelf box to meet new trends in self-selection and self-service merchandising. Many types of factory-sealed packages have been tried, such as the cellophane envelope, the cellophane-wrapped tray pack once adopted by Cannon and Shannon, and the tubular acetate sheet package used by B. Altman & Co. for its private-brand stockings. None of these packages, however, due either to the cost of packaging or to retailer resistance, has ever made much headway generally in the trade.*

One of the chief difficulties, apparently, has been the matter of securing the stockings in a sealed container such as a transparent envelope so that they do not slide out of place and present an unattractive appearance at the point of sale.

A revolutionary new method of vacuum sealing individual pairs of nylon hosiery in transparent flexible plastic film pouches overcomes this difficulty and may well provide the technique which the hosiery industry has long been seeking.

Vacuum-packed hosiery has been announced as a joint development of the Gotham Hosiery Co. and the supplier of the packaging materials and equipment for producing the vacuum packs. Agreements have been signed between the two firms giving Gotham exclusive license to vacuum pack soft goods under the patented flexible vacuum-packaging process. Gotham expects to grant sub-licenses very shortly to non-competing manufacturers in the soft-goods field and in due time to other hosiery producers, as soon as marketing and merchandising problems have been satisfactorily worked out.

Test areas for the distribution of the vacuum-packed nylon stockings have already been chosen and selling began early in 1953, according to Roy E. Tilles, president of Gotham.

In addition to providing a completely sealed, almost letter-thin package for an individual pair of nylons, with the folded stockings so held by vacuum that they cannot move or shift around in the package, the new Gotham vacuum pack appears to have several other advantages over previous types of presealed stocking packs. The combination of plastic films used is reported to protect the color of the stockings by screening out ultra violet rays.

Holding the nylons in a vacuum

* See "Retailer Preference," MODERN PACKAGING, March, 1950, p. 82.

protects the finish of the stockings from corrosive atmospheric conditions and gives them longer life. It also prevents bruising of the yarns due to handling and, of course, provides a completely tamperproof package.

The new package is similar in principle to the flexible vacuum packages being used today for bacon, meats and cheeses, and is produced on similar flexible vacuum-packaging machinery adapted for this new purpose. In fact, it is actually the result of an idea that occurred to Mr. Tilles one day when he went to the refrigerator in his home for a luncheon snack and found some cold sliced meat in a transparent flexible vacuum package.

For years Mr. Tilles had been toying with the idea of a vacuum pack for stockings and at one time in the early '30s, when the first vacuum-packed tins of coffee were introduced, he approached one of the can companies with the idea of a metal vacuum pack for hosiery. For many reasons this did not materialize and a practical conception of a vacuum pack for hosiery remained dormant until the flexible vacuum pack for food pointed the way to a visibility package.

The vacuum food packages have used various combinations of cellophane, Pliofilm, saran and polyethylene, depending upon the product. After experimenting with several different combinations, the package supplier settled upon acetate film and a light-gauge Pliofilm for the hosiery, laminated with a special adhesive. With the nylon, of course, there is no problem of oxidation and, with the special adhesive employed, the lamination was found to hold a vacuum adequately.

Prefabricated pouches—made of two facing sheets of film sealed on all sides but the top and three-color printed with the Gotham trademarked design in blue, gold and black—are supplied to Gotham for filling. Each pair of stockings is first folded by hand around a thin paper backing and placed in a specially designed tray. The pouch is slipped over the tray and removed along with the pair of stockings which is thus placed smooth inside. An aluminum foil ticket imprinted with size, length and fashion shade is to be placed inside the pouch where it is visible through the transparent film.

The filled package is placed in the machine where the vacuum is pulled and the final heat seal is made across the top of the pouch.

No detail has been overlooked to provide a convenient package for the consumer. The film of the pouch is notched at the left side of the front panel with an arrow directing to "open here" to facilitate easy opening.

The new packages are about the size of the traditional tissue fold that fits in a shelf stocking box, but Gotham plans to sell from self-selection counter units which are being designed to hold a complete range of sizes and high fashion shades. All shades will be visible, of course, through the clear areas of the package, so that there will be no need for selling hosiery from samples.

The package features "Vacuum packed for your protection" in a prominent position and this theme will be promoted strongly in all point-of-sale and advertising material to make the most of the new packaging idea. Gotham pinpointed valuable publicity in a few leading newspapers such as the *New York Times* and *Wall Street Journal*.

Gotham felt justified in proceeding with the idea of the vacuum pack when the fact was established that some 60% of women shoppers do not ask to examine stockings before purchase. Careful checks will be made of selling results in the test areas.

Successful acceptance of the vacuum hosiery packs will undoubtedly open the way for the adaption of this packaging principle to many other types of soft goods never considered before. Vacuum-sealed packages will protect hosiery from the formerly inevitable depreciation of handling, yet permit the customer to choose her colors. They will guarantee and preserve sealed-in perfection from the moment super-sheer stockings leave the factory examiner until they are put on to be worn, says Mr. Tilles. Vacuum packaging also protects the store's stock, prevents mark-downs and simplifies inventories.

The same type of package might keep in a permanent state of freshness lingerie, gloves, men's shirts, towels, sheets and hundreds of other articles whose brand names guarantee quality. For many manufacturers of non-food products this development may enlarge the scope of self-service distribution and help to meet the public demand for speedier, more efficient shopping methods which the scarcity of sales help makes essential today.

CREDIT: *Fabricated pouches and Flex-Vac packaging equipment, Standard Packaging Corp., 405 Lexington Ave., New York 17, N. Y.*

MACHINE that pulls the vacuum and makes final heat seal across the top of the prefabricated acetate-Pliofilm laminated pouch is an adaptation of machine used for flexible vacuum packaging in the food field.

MUSIC ON TAPE

OUTER SLEEVE is standard for all tape recordings, with die-cut window to permit name of selection, composer, artist, etc., printed on inner sleeve to show through. Open corner of outer sleeve provides room for firm grasp on inner sleeve when package is opened. Thumb notch on inner sleeve facilitates removal of reel. Die-cut label on reel is printed on pressure-sensitive tape.

About 35 years ago, the disk displaced the old-type cylinder as the basic medium used for phonograph recordings and, through many fundamental improvements in record-playing equipment, the disk has held undisputed sway. During the past several years, competition has waxed hot among different record speeds—78, 45 and 33 rpm—promoted by various record producers. But now comes a new challenge in the form of the high-fidelity pre-recorded tape, which can be played on the thousands of tape recorders sold in the period since World War II. One enterprising organization has combined ingenious construction and effective design in packaging of these new-type recordings.

The magnetic tape recorder, an improved and more convenient version of the wire recorder which first found limited use by our military forces in the second world war, is such a versatile instrument that even the companies manufacturing these units are still uncovering new applications. Their first big market was the nation's hundreds of radio stations, which now utilize tape recordings extensively for musical programs, delayed broadcasts, commercials and many other types of presentations. Industrial research, medicine, schools and colleges and the film industry have also found constantly expanding uses for the tape recorder. Now the home market offers an almost unlimited sales potential.

Prominent among the companies producing this new-type recording equipment was Magnecord, Inc., Chicago, organized in 1946 by four men from the Armour Research Institute, where the original high-fidelity wire recorder was developed. This organization first hit the market with a professional-type wire recorder for radio-broadcast use and was one of the real pioneers of the industry. As later developments laid the basis for improved performance and flexibility through the use of magnetic tape rather than wire, Magnecord went through a complete retooling and redesign program, shipping its first tape recorder in September, 1948. In the succeeding four years, the company's sales have mushroomed into a $3,000,000 annual gross business.

Making and shipping an entirely new type of equipment containing vacuum tubes and other delicate components presented a real packaging challenge. At the outset, Magnecord equipment was placed in wooden and leatherette carrying cases so that radio broadcasters could take the units into the field regardless of weather and handling conditions. Later, special shipping cartons were designed to protect the equipment against jarring and crushing, and special boxes to carry replacement parts to their destination without damage.

In the spring of 1952 Magnecord sales executives realized that, in the words of William E. Farragher, assistant advertising manager, "they had been selling a razor without a blade." People could buy tape-recording equipment, but no pre-recorded tapes were available; they had to make their own recordings from radio broadcasts and other sources. Since most of the prominent musicians, conductors and virtuosos were already under contract to various record producers, Magnecord worked out an arrangement with Vox Productions through which a new corporation was formed under the name of MaVoTape, Inc., to produce and sell "Magnecordings by Vox." Through this program, Vox releases its master tape recordings of classical music played by top-flight European orchestras, conductors and soloists, from which MaVoTape takes direct tape copies in quantities. These recordings, which provide up to a full hour of music, range in price from $6.95 to $9.95, depending upon the actual amount of tape on the 7-in. plastic reel.

The next problem was to create an appropriate package for these pre-recorded tapes. The customary package used for shipping reels of unrecorded tape was a plain two-piece telescope-type box which did an adequate job of protection, but made no attempt at convenient handling or surface-design treatment beyond purposes of identi-

Magnecord's package for high-fidelity tape recordings is in keeping with the sophistication of the product

fication. Magnecord quickly decided that an entirely new type of package was urgently needed, in keeping with the quality of the pre-recorded tapes and to attract favorable attention at the point of sale.

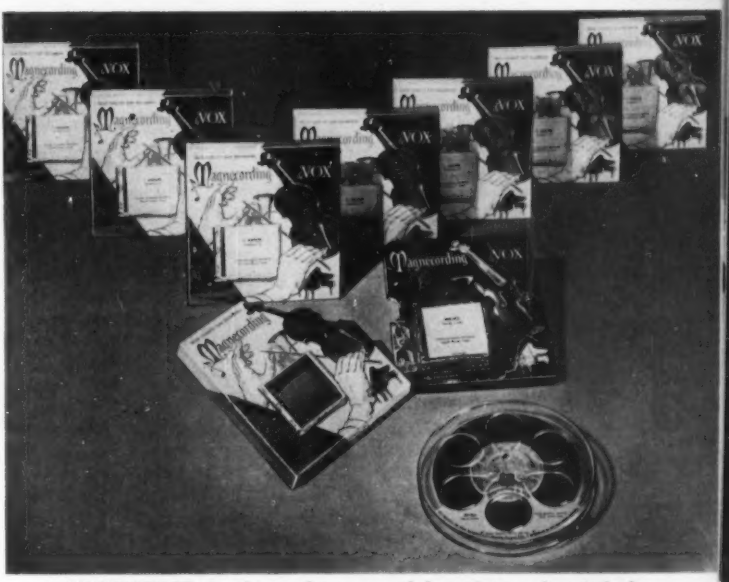
The first step in this direction was a two-piece top and bottom box with a die-cut window in the cover to permit the label to show through. The label, identifying the recording, was pasted to a sleeve containing the reel of tape, which in turn fitted into the base of the outer box. Although this package created much interest at the National Assn. of Music Merchandisers show in New York, further improvements were necessary to equip it for the bigger selling job ahead.

The basic artwork of the original box, with certain modifications, was retained. It showed musical instruments, the hands of the conductor holding a baton and balcony seats at the concert well filled with music lovers. Yellow and red are the dominant colors used on this principal display area of the package, as well as on the back and other package surfaces. Instead of the conventional telescope-style box, a two-piece container was specified consisting of a changeable inner sleeve which would firmly hold the reel of tape and a standard outer sleeve into which it would fit.

In the finished version of the package, the outer sleeve carries the principal display and identifying material on the front surface and certain "sell" and detailed instructional copy on the reverse side. Also shown on the reverse side of the outer sleeve is a duplicate of the violin illustration which appears on the front and a full-color photograph showing one of the most popular models of the Magnecorder tape recorder.

The inner sleeve of the package carries the same artwork in black and white reverse, along with specific copy concerning the title of the recorded selection on its front face and right edge. On the back of the inner

(This article continued on page 190)



CONVENIENCE of package makes pre-recorded sound tapes of musical selections available to owners of tape recorders. On 7-in. plastic reels, the recordings are packed in specially designed dual-sleeve boxes with glued seams, combining convenience and sturdy protection. Edge of the inner sleeve is printed for identification when boxes are placed on shelf.

COUNTER DISPLAY features violinist illustration and is slotted to hold one of Magnecording packages. A front pocket holds printed folders listing currently available selections. New records will be issued each month and distribution is being set up on a national basis.

Desiccants for drugs

Tiny moisture absorbers packed right in the bottle mark a new trend in protection of susceptible pharmaceuticals

Keeping its powder dry is one of the big jobs of modern drug packaging. Desiccant compounds—unitized to suit existing drug packages—are helping to do this job today.

Desiccant drug packs took several years in the making. The recent growing acceptance of this packaging component is being encouraged currently by the development of numerous convenient forms in which the desiccants may now be supplied for inclusion in drug packages. In addition to the use of loose crystals poured directly into the drug container, the drug packer today has a choice of at least eight different types of units for protecting his product with a desiccant component right in the package. He may purchase the compounds in:

1. Paper envelopes.
2. Fabric envelopes.
3. Window envelopes.
4. Cellulose acetate twist wraps.
5. Flat pillbox containers of cellulose acetate.
6. Tubular containers of spirally wound cellulose acetate.
7. Film-wrapped "briquets" in pellet shapes (experimental).
8. Perforated fibreboard cylinders.

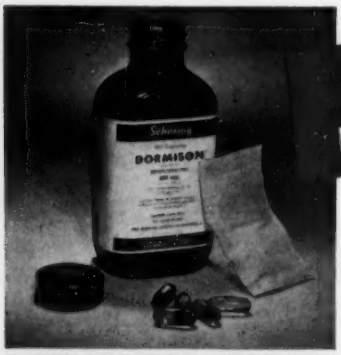
The variety of forms has been designed to meet differences in size and shape of the various pharmaceutical packages, the methods of filling and sealing employed by the drug packager, the type of closure used, the moisture limits demanded by product-and-package combination and relative costs of the package to selling price of the product.

Among the various forms of units offered, three appear to be most favored in current practical use by leading drug houses, while the others are in experimental stages of development or pilot runs. Most generally accepted so far is the envelope of patented fabric. Other commercial drug packages illustrate the use of loose crystals packed right in the jar or placement of a tiny fibreboard cylinder similar to an airline individual salt shaker inside the package.

The compounds used in the new drug packages are usually either silica gel crystals or montmorillonite—a soft, amorphous mineral clay. Either compound when packed in the right quantity with a moisture-sensitive product will attract, within reasonable limits, moisture that penetrates the package, thus shielding the product from attack. Both desiccants have been found to be inert and non-toxic, which makes them suitable for use with pharmaceuticals and food products.

Pioneers in the development of

TYPICAL PRODUCTS IN DESICCANT PACKAGES



SOFT CAPSULES are prevented from clumping and releasing the highly volatile liquid they contain by use of dehydrating unit packed into neck of bottle after product fill.

COATED TABLETS containing aspirin need special moisture protection to keep the antihistamine-analgesic-antipyretic intact.

TWO-PIECE DRY GELATIN capsules contain a vitamin and body-builder formulation with ingredients that require constant moisture protection. Bougie sticks used for the treatment of dairy animals, unitized in heat-sealed film packets, are protected by silica gel envelope. Penicillin tablets are protected by perforated fibreboard cylinder containers of montmorillonite.

desiccant specifications for military packaging in World War II report that experience in protecting military parts and assemblies afforded little specific help in engineering desiccant units to protect retail drug packages.

Federal Food and Drug regulations imposed certain requirements on the package and product specifications of drug desiccants that were not necessary for armaments. Most pharmaceutical preparations calling for desiccant protection are administered to human beings or animals by way of body orifices to treat an ailment or to improve health. The desiccant often must be clearly labeled, sometimes with an added warning that it is not to be eaten, even though no ill effects seem to follow ingestion of the desiccant compounds in current use.

The desiccants also had to be tailored to existing types of drug packages. Most package-production lines for drug products have been carefully engineered to many limitations that do not apply to other types of products and these procedures cannot be set aside or modified easily without bringing up additional problems that involve large expense.

The glass container has become one of the most universally accepted packaging forms for a great many drugs because of its protection and economy. But for extremely hygroscopic products, even a glass container closed with an efficient screw cap and liner will permit the entrance of water vapor when changes in temperature and atmospheric pressure take place in shipping, storing or merchandising environments. A desiccant inside the package can greatly assist in attracting deleterious water vapor away from the product by drawing it to itself.

A basic problem in the desiccant packaging of drugs was how to separate the desiccant from the product in the same container without impeding the adsorbent process in the activated "drier." And of course there was the added requirement of making the new protective units economically feasible to both manufacturer and user.

The color characteristic of some silica gel crystals in action has been demonstrated in several of the new desiccant packages. When activated, this gel turns a bright cobalt blue, paling to lavender and finally pink as it picks up moisture. The color change reveals visually whether or not the product is being protected in a safely dehumidified state. This visibility factor has prompted the packaging of the crystals so that they show through the product container and permit inspection of the package without opening.

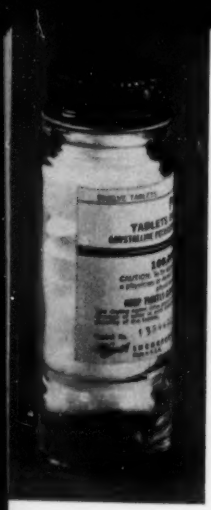
Wyeth, Inc., Philadelphia, Pa., puts these crystals in the bottom of a clear glass container for a number of its prescription products. A quantity suited to the moisture limits of the particular drug is filled into the bottom of the jar, wedged into place by a layer of absorbent cotton. The drug—for instance, buffered penicillin—is then filled into the bottle, say in a quantity of 10 or 12 pills, and topped by another layer of absorbent cotton before closing. A metal screw cap and paperboard outer carton complete the retail package unit.

The cotton separates the desiccant from the product, but allows the pas-

SELECTION may be made to suit the product, the container and manufacturer's budget: loose crystals, paper envelopes, fabric envelopes, cellulose twist wraps, flat pillbox containers of cellulose acetate, wrapped briquets in pellet shapes, domed screw caps with desiccant incorporated, spirally wound tubes of cellulose acetate.

HUMIDITY-INDICATOR envelopes with transparent windows reveal color of silica gel. When it changes from blue to pink, it is time to repack with fresh crystals.

MONTMORILLONITE is supplied in envelopes and tiny perforated fibreboard cylinder containers. The latter makes an efficient desiccant pack for some of the narrower-neck bottles used as containers for certain hygroscopic drugs.



SIMPLEST FORM is the use of loose crystals as they are placed in the bottom of this Wyeth bottle, separated from the tablets by a layer of absorbent cotton, which does not impede the adsorbent process in any way.

age of moisture through all parts of the container, so that the desiccant will attract any moisture that enters the bottle. The crystals are clearly visible in the bottom of the bottle, permitting shelf inspection where desired and warning the user when moisture attack has started to deteriorate the dosage.

Among the packaged desiccant units enjoying considerable acceptance by drug packers is the fabric envelope containing silica gel crystals. The heat-sealed envelope is made of a patented non-woven fabric which has been laminated to cotton mesh for added strength. The resulting unit is completely moisture permeable, yet separates the crystals from the product within the product container. It is especially suitable for use when inspection is neither practical nor necessary during storage, shelf life or use, and where the moisture limits of the product will be protected by 1 to 15 gms. of the desiccant.

Penicillin formulations appear to lend themselves well to this type of protection. Wyeth's Sulfabiotic tablets (penicillin with triple sulfonamides) are bottled in quantities of 100 with the fabric envelope circled around the inside of a screw-capped, wide-mouthed amber glass jar.

Another Wyeth product—for veterinary use—is also protected by the fabric packet. Penstix-SM (penicillin-dihydrostreptomycin bougies) are individually unit packed, each one in its own heat-sealed film packet so that the dosage will remain uncontaminated up to the point of use. The individual packets are filled into a squat, broad-mouthed emerald glass container, with the desiccant envelope turned loosely around them inside the jar. Several other Wyeth products are protected by similar fabric envelopes containing desiccant crystals.

Schering Corp., Bloomfield, N. J., packages an antihistamine tablet prescribed for the common cold with a fabric envelope of silica gel to protect the aspirin content of the formulation. A non-barbiturate hypnotic manufactured by the same house is also being protected by the fabric-envelope type of desiccant unit. The product is an extremely volatile liquid in a soft gelatin capsule. These capsules must be kept entirely free of moisture to prevent clumping in the bottle, deterioration of the capsule and subsequent release of the medicament. The product is available on request from retail drug stores and therefore implies a larger retail stock on hand and possibly a longer shelf-life requirement than an individually compounded prescription sleeping pill. The desiccant packaging apparently assures this longer shelf life.

Ayerst, McKenna & Harrison, who specialize in biologicals and pharmaceuticals, package two of their prescription vitamin preparations with desiccant protection in the fabric envelope. The dosage comes in two-piece dry gelatin capsules and the desiccant envelope is stuffed into the narrow neck of the amber glass bottle after the product fill.

A tiny fibreboard cylinder unit contains the desiccant in bottles for penicillin tablets put out by E. R. Squibb & Sons for the armed services. The desiccant is montmorillonite. The unit looks very much like the one-shot salt and pepper shakers served on the airlines, but is even smaller and is made to "breathe" by means of minute non-sifting perforations punched into the top. The desiccant does not shake out.

This package form has been adopted only recently as standard procedure, but several large drug houses are reported to have ordered quantities sufficient to package mass-production runs of at least one of their hygroscopic preparations. The little cylinders slip down the neck of a bottle easily and are quite strong so that there is little danger of breakage.

The relatively high density of the montmorillonite is reported to permit packaging of a 50% greater weight per unit of volume than other desiccant compounds.

The use of paper envelopes for both desiccants is a recent development somewhat less costly than the patented fabric packets of the same size and shape used for silica gel and is best suited to products offering a profit margin out of scale with the cost of fabric.

Another variation of the envelope form is a paper packet with a window that shows the color change of blue silica gel, framed by an indicator for more accurate inspection of packaged drug units. The window is of moisture-permeable acetate film. The humidity indicator is printed on the paper portion of the envelope in colors corresponding to the color changes of the desiccant for instantaneous comparison. The danger line is identifiable as moisture seeps through the acetate window. When the crystals show the first sign of turning pink, it is time to repack the product with a fresh dehydrating agent.

When used with products packed in transparent film or glass, the window envelope is placed inside the container with the indicator side facing outward. This permits inspection without contamination of the product.

Transparent twist wraps of cellulose acetate containing a desiccant are being used to protect penicillin tablets and may be dropped right into the bottle with the product. The moisture permeability of the acetate film permits the attraction of moisture to the desiccant. The unit is produced on special machinery which effects the seal by "spinning" the wrap around the desiccant crystals.

Experiments are in progress to expand the size range and mechanical production of these bullet-shaped packages, which show promise of broad application. Their shape allows insertion into the narrow-neck containers used for many drug packages. Until recently it was considered impractical to add desiccant protection to such packages because of cost.

Another suggested form is a tube of spirally wound cellulose acetate filled with loose silica gel crystals. This type of desiccant unit is placed in the product container similarly to the twist-wrap unit.

Development work has been started on silica gel in solid forms. The crystals are now being pelletized into cylindrical briquets and wrapped in printed, colored plastic film. This form is supplied in different diameters and thicknesses to fit any type of con-

(*This article continued on page* 198)

FULL VISIBILITY of molded polystyrene jar shows colors and textures of the various ice-cream flavors more enticingly than a black-and-white photo can convey. Company and product identification are molded into the slip-on lids; brand name and flavor are carried on an applied adhesive label.

EASY TO HANDLE and display, one style of container serves complete line of flavors. Empty containers nest in storage. Quick flavor identity and re-use possibilities are added selling points.

Ice cream in plastics

Golden State makes packaging history by marketing popular-priced product in transparent polystyrene container

Ice cream, which by nature has strong visibility appeal because of its flavor-color and delicious frosty appearance, has had to hide these merchandising assets. Protection has always been paramount and display secondary or no factor at all. Consequently, while the sales tide of impulse and sight-appeal buying was sweeping many other products packaged for complete visibility on to new favor, ice cream was compelled to stay back, package-wise, with those food treats that could be sold only with sales copy and color illustration.

Golden State Co., Ltd., San Francisco, Calif., a leading manufacturer of dairy foods in the West, accordingly has taken a significant step forward in introducing its new "I-C Pak" ice-cream container. This package—a one-pint, tapered, cylindrical container with self-sealing, slip-on cap—is molded of clear polystyrene. It permits the shopper to see all the richness of color of the ice cream inside, at the same time heightening display effectiveness through contrasting colors of tempting chocolate, strawberry, vanilla and pistachio flavors stocked side by side. Identification of flavors, of course, is much easier for the shopper. In addition, the container's re-use value is a purchase incentive.

Golden State credits the molder and the suppliers of the polystyrene with contributing considerably to the container's successful development.

Significantly, Golden State's transparent package is being distributed generally in retail outlets that feature self-service facilities for quality ice cream. The new package sells for only a few cents more than conventionally packaged Golden State ice cream and is not just a premium pack for special promotion.

A transparent cellulose acetate ice-cream container* was used by Rosemarie de Paris, a luxury confectioner in New York, several years ago. This, however, sold for 85 cents a pint and was definitely in the specialty class.

A spokesman for Golden State believes the company's new polystyrene container is the most merchandisable ice-cream package known to the industry. Reports from leading supermarkets and chain stores show that sales of Golden State Cream O'Gold ice cream in polystyrene packs have increased up to 300%. Perhaps typical of the reports is this, from Lucky Stores, Inc., of San Leandro, Calif.:

"We used a three-week period before the new carton, then stopped one week during the time it was being stocked and compared the first three weeks with the three following weeks after it had been stocked. During that time there was no special advertising and the price was advanced 5 cents per pint.

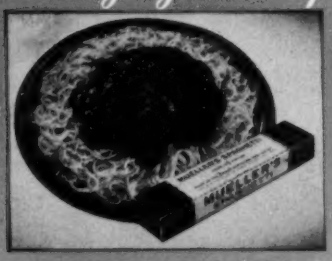
"Sales for the three weeks with the plastic carton were 105% greater than the three weeks with the paper carton."

The plastic container nests compactly to save storage space and is simple to handle. Because no printing is required except the company and product identification embossed on the lid, it is necessary to stock only one type of container. This is a significant advantage in purchasing and handling. Brand name and flavor of contents appear on adhesive labels, quickly applied to lids as needed.

CREDITS: *Polystyrene container molded by Mutual Plastic Mold Co., 4719 Firestone St., South Gate, Calif., using Monsanto and Dow polystyrene and distributed through dairy supply houses by Golden State Sales Corp., 425 Battery St., San Francisco, Calif.*

* See "Ice Cream in Acetate," MODERN PACKAGING, Sept., 1948, p. 100.

Packaging's Hall of Fame®



FORTY-NINTH OF A SERIES

MUELLER'S

MACARONI PRODUCTS

Almost single-handed the C. F. Mueller Co. established macaroni products as a basic staple of the everyday American diet. In the process the Mueller name and the familiar red-white-and-blue package were established as virtually universal symbols for this type of food product among native-born Americans.

Entering the field when most macaroni products were either imports or were, when packaged at all, usually packaged to resemble imports as closely as possible, Mueller from the first insisted that its products were as American as the Wisconsin cheddar which so often accompanies them to the family dinner table.

When other macaroni manufacturers were hand rolling their product in paper wrappers similar to those then used for imports, Mueller was the first to break out of the traditional pattern to adopt the machine-formed-and-closed "cracker box," almost as soon as complete machinery for this then-revolutionary package became available.

While other manufacturers in the field relied heavily on a multiplicity of brands and much private label work, Mueller was the first to concentrate solely on its own brand name and a single package design.

At a time when macaroni makers, in common with the majority of food product producers, were local businesses relying on the economies of short-haul distribution to keep them competitive, Mueller was the first to realize that the economies of large-scale mechanized packaging would help a company in its field to break the traditional pattern of local distribution and thus to grow.

Mueller's break with traditions in its industry came in 1907, when these decisions about packaging and distribution were made. Since then and until the present, the company has dominated the macaroni-products industry in sales and in the public mind.

The company ran the first advertising campaign in its industry, starting with car cards in 1919, and by 1920 had become one of the most consistent advertisers in the grocery field. Media have changed through the years, but Mueller's advertising and promotional efforts have never slackened. Emphasis was switched gradually to radio, beginning in the days when broadcasting was young and the only other macaroni advertising on the air was that heard on a few foreign-language programs. When TV came along, Mueller was again first in its field as one of the very first commercial sponsors of scheduled television.

Throughout all these years, the familiar package has been represented "without exception" in all Mueller advertising, although descriptions had to suffice during the radio period. And because the original package design was clean cut, distinctive and colorful, its color scheme and basic format have been preserved almost without change, lending a special force to Mueller's cumulative advertising impact because millions of Americans have known that package throughout their entire lifetimes.

The scope of Mueller's distribution outdistanced the field early in the company's post-World War I history and is still the broadest in its industry today, taking in approximately 60% of the country's population. Leadership has not come by default, either. There were, at the beginning of 1952, a total of 379 different brands of macaroni products to be found on retail store shelves, but Mueller's familiar

DAILY TASTE TEST, a family tradition, is carried out today by C. F. Mueller, executive vice president, grandson and namesake of the founder, Christian Frederick Mueller.

NOMINATED FOR PACKAGING'S HALL OF FAME BECAUSE:

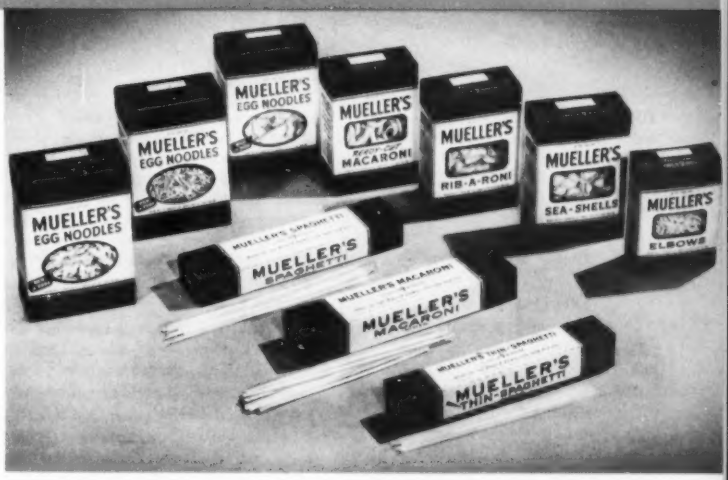
- **Through packaging, they Americanized a foreign product and made it a low-cost staple of the American diet.**
- **They were first in their industry to depart from the crude paper spaghetti wrap and adopt the then-revolutionary "cracker-box" carton.**
- **They were first in their industry to recognize the wisdom of promoting a single label and brand name to develop wider markets.**
- **They met the competition of local, low-cost distribution by pioneering mechanized, low-cost packaging.**

red-white-and-blue packages were on the shelves of 33% of all food stores throughout the country. The nearest competitor's brand appeared in only 19% of the stores. A "home shelf inventory," made at this same time, found Mueller packages in 50% more homes than those of the nearest competitor.*

The Mueller brand's original rise to dominance and its continued leadership have been to a large extent the result of a series of farsighted packaging decisions made under the guidance of a family management which has come down in unbroken succession through some 85 years to the grandson and namesake of the founder. Unlike many present-day food industry leaders, the Mueller brand has not achieved and held its top position through combinations or mergers with local brand leaders, nor has the company sought profit reinforcement by applying the name to a broadened line of foods. Growth has been from within, through concentration on a single brand name and product type.

The leadership in packaging efficiency, established in its industry in 1907, has never been allowed to slip from the Mueller grasp. The original "cracker-box" type of package was replaced by automatically filled and weighed upright window cartons for noodles and short macaroni types as part of a thoroughgoing program of machine and package modernization begun immediately after World War II. One outcome of this postwar program has been establishment of a unit packaging labor cost estimated to be as much as 50% less than that of the most efficient competitor on some items although Mueller absorbed sub-

*According to an independent study made for the National Macaroni Mfg. Assn., by the A. C. Nielsen Co., Dec., 1951.



TODAY'S MUELLER LINE maintains a package family resemblance, although upright window cartons have replaced the overwrapped, waxed-paper-lined "cracker-box" package for egg noodles and the "short-cut" macaroni products. "Long goods" (foreground) still use package adopted in 1907—somewhat modified, but basically unchanged. Upright packages were adopted in 1950 as part of the company's complete postwar packaging-modernization program.

WICKER BASKET used for door-to-door delivery way back when the first Mueller product, egg noodles, was still being made in the kitchen of the family home in Newark, N. J. This was in 1867. Pushcarts and then wagons replaced the basket.

GRADUAL EVOLUTION of the Mueller package has preserved the recognition value of the design, built up through years of advertising in which the package always appeared. The 1907 package was essentially Uneeda Biscuit's then-revolutionary cracker box. Clean original design was transferred almost intact to upright carton designed for faster machine forming and closing.

stantial hourly wage increases during the period.

This packaging leadership, based on machine modernization and company-inspired engineering advances, has backed up consistent sales increases which regularly surpass the growth of the industry as a whole. For example, while macaroni-products industry sales rose by a little less than 100% in the 1937-1951 period, Mueller's sales increased 200% in the same period.

The beginning

Somewhat paradoxically, this company which has done most to establish the originally Italian spaghetti and macaroni as staple items of the everyday American diet was originally formed to make a German specialty—egg noodles. The founder, Christian Frederick Mueller, had been trained as a baker in the old country and shortly after arriving in the United States set up a bakery in the kitchen of the family's home in Newark, N. J. This was in 1867. When Mr. Mueller found that his egg noodles were arousing the most enthusiastic response among the growing German-born population of the area, he soon decided to concentrate entirely on this item.

The first packaging consisted of paper bags holding ¼- and 1-lb. quantities of noodles, sold house to house in a wicker basket. As the noodle business prospered, the home kitchen gave way to a series of ever-larger quarters and a small fleet of three-wheeled pushcarts to deliver the noodles.

By 1885 a rather sizable steam-powered plant had been erected in Newark, N. J., and in addition to the doorstep trade Mueller began supplying many of the popular German restaurants of that era in New Jersey and nearby New York City. The noodles, in 20-lb. boxes, were delivered by horse-drawn wagons and Mueller's picked teams were a source of great company pride as they vied for honors with the famous brewery horses of that period.

In 1890 the Newark factory was outgrown and the business was moved to Jersey City.

In 1893 Mueller noodles were beginning to go into grocery-story distribution. Mueller realized that in the cracker-barrel stores of that day his noodles would lose the personal sales contact formerly supplied by the company's routemen and he refused to supply bulk noodles. Instead, the company adopted an early style of hand-glued upright carton. A design of barrels of flour, a sheaf of wheat, hens and eggs served to emphasize the wholesome ingredients and to substitute in part for the routeman's spiel. Shortly thereafter it was realized that the generous use of fresh shell eggs was the key selling point and the noodles were renamed Mueller's "White Leghorn Egg Noodles." The package was made dark blue to give good contrast to the white lettering—a clean-looking color combination that has now become identified with Mueller.

Macaroni and spaghetti

By 1894 Italian immigration to this country was in full swing and many Americans were getting acquainted with macaroni and spaghetti. Mueller realized that just as noodles had ceased being a specifically German dish and had become widely accepted by American housewives, the new Italian products could be popularized if their foreign origin, the mystery of their manufacture and the uncertainty about their use could be overcome. Consequently, Mueller started to make and market "Flag Brand" American macaroni and spaghetti, "a wholesome food made in a clean American factory from the purest ingredients." Simple cooking directions and recipes on the label made it plain that the product was intended for the average American home kitchen.

Mueller started packaging macaroni and spaghetti in the same type of hand-rolled light-blue paper wrapper then used by importers of Italian macaroni and American imitators. Soon, however, Mueller switched to a dark-blue paper wrapper establishing a family resemblance to the Mueller egg-noodle carton.

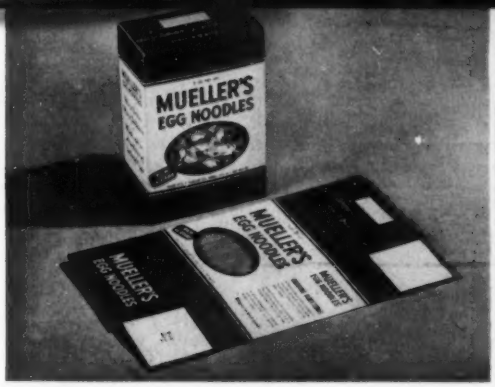
The earlier packages bore a full-color representation of an American flag. When patriotic organizations objected to the widespread practice of portraying the flag in commercial displays and trademarks, Mueller quickly responded to the new concept of flag etiquette with a simple white flag in a circle on a red background.

The break with tradition

Pride in a good product made in clean surroundings of superior ingredients led Mueller to want his product under the Mueller name. He had discovered that his colorfully packaged American products could compete successfully with the cheaper bulk domestic product and with imported goods.

It is easy to understand, therefore, why Mueller was excited by the truly revolutionary "cracker box" in which Uneeda Biscuits appeared around the turn of the century.† Here was a superior package—a paperboard carton with an interfolded

†See "Uneeda Biscuit," MODERN PACKAGING, Feb., 1949, p. 82.



SIMPLER PACKAGE was result of change to upright carton. Old triple-wrapped cracker box with waxed paper inner wrap and printed overwrap provided more moisture protection than products need. New unlined glued carton, for use on fast equipment follows modern food-packaging practice.

MACARONI SHORT-CUTS like this shell-shaped item, are getting packaged this winter with the design slightly revised for better supermarket selling. Note small angled panel (in red) carrying use suggestions and addition of the word "macaroni" for benefit of new users. Short-cuts are strongly promoted.

wax paper liner and an end-glued printed paper overwrap—cheap enough to use as a package for a nickel's worth of crackers because it could be machine produced. Mueller watched the reception of the new package in the grocery stores. Like the cracker manufacturer, he was himself a packager in competition with bulk goods. He realized fully the economic significance of machine production for widening markets.

The macaroni-products industry at that time, C. F. Mueller Co. included, was a group of strictly local producers, each relying heavily on the economy of short-haul distribution to keep prices competitive. Mueller was the first in his industry to see that the economy of the short haul could be replaced by large-scale packaging. He adopted a policy of single-minded concentration on one brand which could be efficiently packaged, distributed and promoted not only in the original small market area, but in a widening circle of distribution.

This drastic break with tradition took some close figuring on Mueller's part. He had to make a decision largely on intuition and faith, because the machinery for complete mechanical forming, closing and overwrapping had been available for only three years when Mueller obtained it in 1907. He purchased it in spite of the fact that macaroni products do not require the degree of moisture protection needed for crisp soda crackers. Mueller wanted the machinery for its efficiency and speed. Even if the cracker package for his product constituted wasteful over-packaging, to use the modern term, he reasoned that customers would be favorably impressed by the pronounced improvement over the packages of others. The Uneeda package had set a new standard and Mueller wanted no package that could be considered less effective.

Reward for being right

Mueller's plunge put his brand out front almost immediately. By 1907 grocers were outgrowing their resistance to packaged versus bulk foods and discovering the advantages of the package in eliminating waste and spoilage. Consumer agitation for pure foods also played into the packager's hands. Mueller salesmen, charged with moving the largest volume of a branded macaroni product ever produced at that time, were soon on the way to achieving blanket distribution in the New York metropolitan and New Jersey areas, and started to move upstate and into the Philadelphia area.

The Mueller plant was soon outgrown and in 1915, just eight years after installing the machines, C. F.

FIRST AD CAMPAIGN in macaroni products industry, and one of first for a staple food, began with these Mueller's post-World War I car cards. Upper two posters are pre-1923. Bottom poster, typical of early '30s, shows formula company still uses today at point of sale.

SHOWING PACKAGE on every piece of visual advertising material is a Mueller rule, followed "without exception." Montage from 1932 sales-training slide film shows car card at top left, outdoor billboard and newspaper ads. Superimposed microphone symbolizes radio.

Mueller Co. opened what was then the world's largest and most modern macaroni plant on a four-acre Jersey City, N. J., site still occupied by the company. This new plant was widely publicized and became a showplace through which visitors were escorted in a constant procession to see the fascinating machines and the groups of white-aproned, white-capped girls filling the packages as they moved from the automatic package-forming machines to the automatic closers and overwrappers along continuous conveyors.

World War I, which cut off imports of macaroni products from Italy, found Mueller equipped to expand production and distribution. Production was pushed to the limit of the big new plant's capacity. By the end of the war Mueller had solidly established the brand along the northeastern seacoast and distribution was extending as far inland as the city of Buffalo.

Pattern of promotion

The backbone of Mueller advertising in these days was the company's colorful car cards. During World War I the public became accustomed to poster advertising for promoting bond drives, recruiting, scrap salvage, etc. Immediately after the war the Mueller Co. turned to this new poster art as a means of holding its postwar position against the inroads of renewed imports and domestic competition. By 1920 the car cards began to follow the formula which the company has held to ever since for advertising and point-of-sale printed material: every poster without exception had to show the package prominently and every poster featured an appetizing prepared dish or meal made with a Mueller product. Mueller car cards continued in use for years. By following transportation routes the company was able to concentrate on population centers. Overnight, by their use, Mueller could obtain a high degree of impact on a new market area.

The demand for new ideas created by the car-card campaign soon led Mueller to set up one of the earliest test kitchens where cooks cooperated with trained home economists to develop tasty, appetizing-looking dishes. Always carefully planned to include only the ingredients available in the average American home kitchen, new recipes were timed to appear on the packages with the appearance of each new series of car cards. The same technique is applied today to Mueller point-of-sale posters, which urge the customer in the store to pick up a package and look for the recipe of the dish so glamorously portrayed.

Mueller advertising was soon broadened to include newspapers and outdoor display. Results were so successful that the company's name became almost synonymous with macaroni, spaghetti and egg noodles in the grocery trade during the twenties and early thirties. Practically no brand competition of more than a local nature developed until well into the '20s and it was not until about 1940 that other brands began to adopt similar policies.

Radio and TV

Mueller was an early user of radio and by 1937 was putting the biggest slice of its advertising dollar into this medium. Daytime network programs were used such as ABC's "Morning Market Basket" and CB's "Bill and Ginger." Then, early in 1941, to obtain the flexibility and economy of spot programming, Mueller switched to highly rated news programs. The emphasis of newscasts placed Mueller in a strong position in radio since interest in newscasts heightened during and after World War II.

The schedule of Mueller's current morning television program features "live" commercials enacted in a special studio kitchen presenting the preparation of a dish using one of the company's macaroni products. The package is prominently seen. The company uses the new medium economically as Mueller's distribution is conveniently grouped within available split-network coverage.

Mueller distribution in the between-the-wars period grew to include the entire East Coast, from Florida through New England, and westward to take in Pennsylvania, Indiana, Ohio and Michigan.

Package evolution

A Rip Van Winkle familiar only with the original 1907 Mueller package would be sure to recognize the company's current package at once. The clean, simple design has been changed very little. According to company legend the basic design originated quite informally when someone wrapped a piece of plain white office paper around one of the dark-blue-wrapped macaroni packages that had been in use since 1894. About one fifth of the blue area was left exposed at each end. Bold, blue-bordered, red block lettering for the Mueller name and product, a narrow red stripe close to the edges of the white area, and neat red and blue

CAR-CARD TRADITION is carried on by Mueller point-of-sale advertising by following the same ". . . show the package and a tasty dish" precept. Plug for recipe on package provides shopper with incentive to pick box off store shelf.

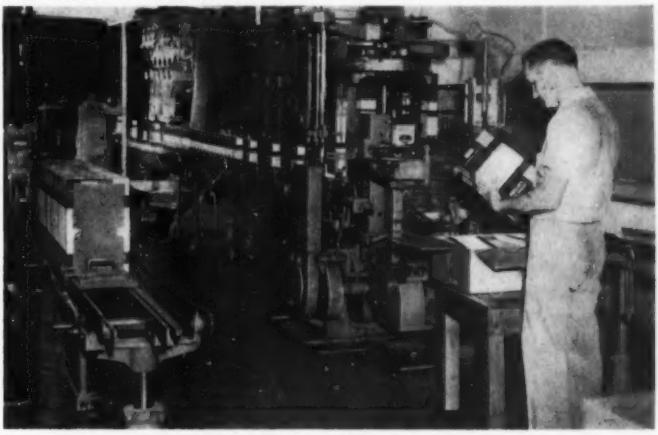
lettering for recipe and promotional copy completed the design.

There were minor changes from time to time. In 1923 the small red spot carrying the white flag and the "Flag Brand" trademark was dropped. The main logotype panel was repeated on the bottom of the box for better display. Package dimensions were changed several times before 1930 to save paperboard, wax paper and wrapping stock, to provide an easier-filling shape and to permit standardization of shipping-case sizes among the various products. In 1930 the one-piece printed overwrap was replaced by a three-piece wrap in which two glued rectangular end labels effected the end seal. This substantially improved machine speed at the final packaging stage, allowing the company to adopt improved filling techniques at earlier stages along the line.

Papers and inks underwent many improvements during the years. Better clay coatings were adopted as they became available. The company wanted the whitest stock obtainable to symbolize purity and to provide contrast with the lettering. Scientific methods and equipment to establish color standards for exact shades of printing inks were adopted with such success that "Mueller Red" and "Mueller Blue" are reported to have become informal color references among packagers in the grocery trade. The most recent redesign of the old-style package was a 1945 clean-up in which the blue border of the logotype lettering disappeared along with traditional copy about the ". . . clean American factory."

AUTOMATIC PACKAGING of macaroni short-goods and egg noodles takes place in this area of Mueller plant. Units in foreground are package formers which set up the folding paperboard cartons. At extreme right and in center background can be seen three of the six-scale filler-weighers, fed from the floor above. Package sealer and case sealer are in right background.

PHOTO PNEUMATIC SCALE CORP., LTD.



SPEED AND EFFICIENCY of this 90-package-per-minute weigher-filling line is unique in the industry. Mueller-patented technique for moving hard-to-handle egg noodles has given the company an important advantage in its industry.

Mueller's "master plans"

As the war neared its close, the Mueller management realized that ordinary war-deferred machine replacement and expansion plans would have to be combined with something more far reaching and dramatic to meet postwar competition.

In 1945 Mueller embarked on the first of what it called "master plans," which have since resulted in an almost complete turnover of equipment, a complete re-arrangement of the factory, new package designs and continued dominance of the market. The "master plans" were carefully formulated goals, each covering a separate phase of the company's operation which could be "broken off" from the over-all picture and studied.

Target dates of one to four years were set for a group of plans which, taken all together, described the total effort felt necessary. The date and scope of each plan was informally and flexibly variable, but psychologically the system made it easier for the executives and engineers to focus their thought on one thing at a time.

Production "master plans" called for a thorough modernization of techniques in continuous, straight-line output capable of immediate and future expansion. Packaging "master plans" called for: (1) capacity to handle the planned-for production increases and (2) a complete study of packages from the point-of-sale point of view.

First "master plan" in Mueller packaging involved the "short-cut" item, elbow macaroni. Elbows had originally been the portion of the macaroni which curved around the rods on which the long pieces were draped to dry. In the early days it was reground into the mix by most macaroni makers, but Mueller had offered the shape from the beginning as it appealed to many non-Italians because it was easier to eat. Later, special machines were devised specifically to make elbows.

Mueller and other large makers had come to promote elbows more and more, largely because it was free flowing and could be easily ma-

chine filled. Its popularity was on the upturn in 1945. Therefore, one of the first decisions related to the short-cut packaging plan was to add three new varieties of short goods: a larger short-cut to be called "Ready-Cut"; a fluted, slightly curved version in the same larger size to be called "Rib-A-Roni," and a realistic ocean mollusk shell shape called "Sea Shells."

An upright window-package style was selected for elbow and the new short cuts. The 8- and 16-oz. sizes were selected because market tests had already proved customer preference for these sizes. Completely transparent flexible packages, considered briefly by Mueller before the war, were studied again, but rejected. Inadequate product protection against breakage and loss of the recognizable Mueller package style were the reasons. Transparent windows in an upright carton provided all of the product visibility required, tests showed.

The new equipment installed for packaging the enlarged assortment of short goods was fairly straightforward. The products are durable and free flowing and can be handled on some of the most rapid weighing and filling equipment available for dry products. Between the beginning of the short-cut master plan late in 1945 and April, 1952, Mueller sales in this product category increased approximately 77%. Unit-packaging labor costs were lowered 24.7% in spite of yearly wage increases over the period.

Noodle technique

The egg-noodle packaging program was a much tougher row to hoe. Noodles are more fragile than macaroni short-cuts and have always been considered one of the most difficult products in this field to package because they tend to clump, jam and cluster instead of flow. Between breakage and clumping, it is difficult to get a uniform weight fill to occupy a uniform volume in a package.

Noodles, traditionally made in a long, folded shape, formerly had to be carefully hand packed. As packaging efficiency became increasingly important to manufacturers, Mueller and other efficient producers simplified the shape and reduced the length of individual noodle pieces in an effort to make them tractable.

However, even with the improved noodle shape, 32 packages per minute was the maximum speed of the best weighing and filling equipment on the market. To attain scheduled future production with 32-per-minute fillers would have required at least two machines. A single machine producing 60 packages per minute, if it could be developed, promised a 75% saving in labor cost and seemed well worth considering even if development exceeded the cost of two standard units.

Mueller engineers engaged in intensive research of the problem while one machine supplier made a complete study in his laboratory. Finally, after many false starts, a Mueller-patented method was evolved. This method, in conjunction with a new six-scale filler weigher, handles the worst actor, fine egg noodles, at 78 packages per minute and hits a consistent 90 per minute with the slightly freer-flowing wide egg noodles.

The company estimates its packaging labor cost on these important products is ". . . at least 50% less than that of the most efficient competitor." Specifically, packaging unit labor cost on noodles was lowered 61%, although the hourly wage increased greatly in the same period.

Long-goods problem

The last stronghold of manual operation in the Mueller plant is the "long-goods" section—macaroni, spaghetti and thin spaghetti. Forming and closing of the package is automatic, but nobody has yet found an economical or accurate mechanical way to put a pound of spaghetti into a box. Needless to say, one of Mueller's "master plans" is to lick this problem.

In the meantime, the long-goods package remains the same familiar triple-sealed carton, recognizably a direct descendant of the 1907 model.

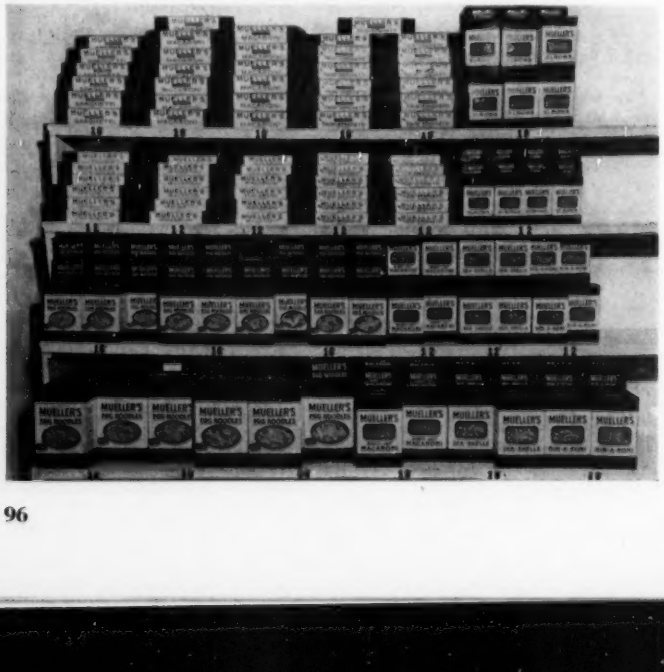
Interest in the long-goods "master plan," however, has not kept Mueller from refining and streamlining the present manual stage in this line. Seemingly minor improvements in the way the product is brought to the packers to eliminate non-productive lifting, bending and reaching, and refinements in carton-forming machines and conveyors have added up to steady production increases. Since 1948 packaging-unit labor cost on long goods has been reduced 28% in spite of substantial hourly wage increases.

Mueller is big enough to afford major machine investments and a crew of able engineers and researchers, yet small enough so that its people can view it as a coherent whole and work in the relaxed atmosphere in which experimentation and imagination can flourish.

Machine men are particulary fond of the Mueller attitude toward equip-

(This article continued on page 196)

MASS DISPLAY of Mueller macaroni-products line forms complete "department" on the shelves of a food store. All items are packaged in both 8- and 16-oz. sizes. Note the price advantage to customer purchasing larger sizes, which reflects the cost advantage in packaging in larger units.



CIGAR-SALE BOOSTER is a 10-cent folding carton designed to hold either one, two or three cigars plus a miniature new-member-of-the-family announcement or other greeting. Compact counter display holds sample mailer plus a dozen each of six different greeting cards. Stand-up sign on display shows how to address the mailer and the postage required.

SELECTION of gift card covers most occasions on which the gift of a cigar is traditional—birthday, new job, new baby, etc.

SELF-MAILER carton flaps lock securely when closed and customer places address and stamp directly on the top flap. Three cents' postage is required to send one cigar nested in center of box. Two more cigars can be placed in side chambers and mailed for six cents. Corners of greeting card tuck into slits in the carton, which hold it firmly in position.

Pass the cigars by mail

Clever mailer package and greeting card help Cigar Institute promote the all-occasion remembrance idea

The Cigar Institute of America, which naturally approves of the custom of distributing cigars on joyous occasions, realized recently that the passing out of cigars by proud papas was sadly restricted to the usual box for friends, neighbors and the boys down at the office. All distant friends and relatives ever got was an announcement—but no cigar. Furthermore, there were other occasions besides fatherhood that could be marked by the gift of a cigar.

CIA, promotional arm of the cigar industry, set out to remedy this shortcoming by planning a package that would make it as easy to send a cigar to Uncle Louis in Alaska as to send him a postcard. This package turned out to be an ingenious five-tuck paperboard folding carton designed to hold either one, two or three cigars plus a miniature greeting card or announcement. The carton needs no further wrapping—the user simply puts in the cigars of his choice, closes the flaps, addresses and stamps the top flap and drops it into any mail box. Three-cents postage suffices with a one-cigar load.

Once the idea had taken form, Cigar Institute passed it along to a greeting-card manufacturer who had pioneered the idea of gift-package mailers for handkerchiefs and stockings, thereby assuring the cigar-card mailer combination of distribution through regular greeting-card channels as well as cigar stores and stands. This firm worked out the design of the folding box and designed a compact plastic counter display unit that shows one mailer complete with cigar and presents a six-card selection of greetings: Christmas, birthday, anniversary, get-well and papa-to-be, as well as birth announcements. A complete package ready to mail retails for 10 cents—without the cigar.

Cigar Institute supported initial introduction of the cigar-greeting mailer with a publicity campaign within the industry and on the consumer level, but with particular emphasis on tobacco jobbers, who were urged to carry and promote the item.

CREDIT: *Carton, display and greeting cards, Treasure Masters, 605 Fourth Ave., Minneapolis 51, Minn.*

In-plant box former

Tomato pre-packager's machine produces 1-piece corrugated cases as needed, to save time, cost and space

In a produce packing plant, where perishable food products must be transferred without delay from bulk to consumer packages, space and time are of the utmost importance. Bulk fruits and vegetables, as they arrive from growers, take up considerable space, as does the equipment used in grading them prior to final packaging. During peak seasonal loads, when heavy packing schedules may be required, the storage problem can become particularly serious. Consequently, any piece of equipment which can efficiently reduce the amount of space required for packing and packaging materials merits the scrutiny of plant operators.

Such a machine was recently installed in the plant of Growers Prepackage Co., Schiller Park, Ill., custom packer of tomatoes, lemons, onions, garlic and other produce items for wholesale distribution. The new machine—first of its type to be installed in a produce packaging plant—produces one-piece corrugated shipping cartons with glued corners and self-hinging covers. The boxes are delivered at rates as high as 550 per hr. for immediate use by two tray-wrapping and packing lines. They replace a two-piece telescope-style corrugated box previously used for multiple packs of tray-wrapped tomatoes and thus make available plant space formerly needed to set up and store shipping-box covers and bases. In addition, the new machine releases for more important plant activities three or four workers required to corner stitch the two-piece boxes previously used.

With the new one-piece shipping container, which holds ten 14-oz. cellophane-wrapped trays of selected tomatoes, savings estimated by Frank Battaglia, plant manager, at approximately 25% have been attained in comparison with the earlier two-piece boxes. Savings are based largely upon the more efficient use of employee time (only one operator is needed to handle the machine), but also involve the elimination of stitching wire and additional handling required with the two-piece boxes. Trade sources estimate the cost of setting up telescope-style boxes at about $20 per thousand.

BOX-FORMING MACHINE takes preprinted blanks from supply hopper and delivers complete one-piece hinged boxes with all corners glued and cover in closed position at rates as high as 550 per hr. One operator can keep hopper filled, stack finished boxes and keep two packaging lines supplied.

Whereas blanks for the previous boxes were brought to the plant bundled together, requiring considerable time and labor for truck unloading and stacking in the plant, blanks for the one-piece boxes are transferred readily into the plant on skids, greatly expediting the unloading operation. As many as 1,200 blanks may be loaded on one skid and empty skids are picked up by the supplier each time a delivery is made. Space required for the box set-up machine itself measures only 6 by 11 ft.

In the present installation at Growers Prepackage Co., the box machine serves two tomato-packing lines. Each line is equipped with a high-speed, automatic wrapping machine which overwraps tray-wrapped tomatoes placed in the trays manually after having been passed through the grading equipment. Printed cellophane for the tray overwraps is supplied in roll form, cut off and registered automatically by electric-eye controls on the wrapping machines. Finished containers from the box-making machine are transferred to the wrapping lines on skids; later, provision may be made to handle this operation directly by means of a conveyor. Since the

machine can set up finished boxes at a rate sufficient to keep up with the two wrapping lines, there is no need to build up advance inventories of shipping containers.

The boxes, measuring 24¾ by 9¾ by 2⅝ in. in depth, are designed to accommodate 10 of the 14-oz. consumer packages, each holding four selected tomatoes. They are placed in open position directly beyond the wrapping machines so that the operator at the end of each packaging line can slide the consumer units into the boxes in two groups of five each, as shown in an accompanying photograph. The final operation consists of folding down the top of the shipping boxes, which stay firmly in place without supplementary taping or other fastening.

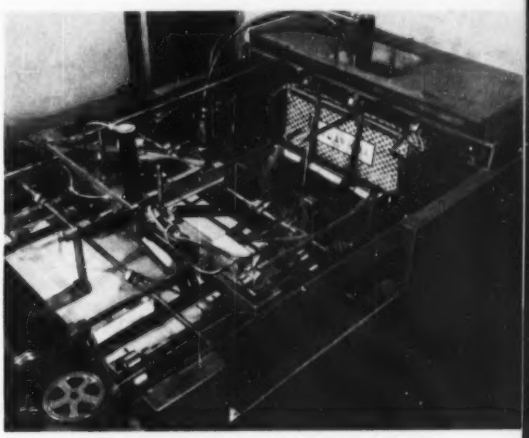
The boxes, consisting of 200-lb.-test corrugated board, are printed in red and green with the name and address of the distributor and the "Little Gus" trade name in script. The distributor's trademark—a plump red tomato—lends color and identity to the top panel of the package. Due to their one-piece construction, the boxes have no cover which might become separated from the base during shipment or handling. The glued corners make for a rigid container with high stacking strength.

A convenient feature of the new box-making machine—which is covered by process and structure patents pending—is the fact that the completed boxes are delivered from the same end of the equipment as that where the blanks are loaded. This arrangement enables one operator to keep the machine supplied with blanks, stack the finished boxes as they emerge from the machine and keep the wrapping lines supplied with boxes. A foot switch, supplied as regular equipment with the machine, permits the operator to stop and start the unit without touching the regular control buttons. Connected to the machine with heavy-duty electric cord, this switch may be placed wherever convenient for most efficient operation.

The new box-making machine installed by Growers Prepackage Co. is pneumatic in operation, with air pressure provided by a supply tank and compressor unit located adjacent to the equipment. Basically, the operating procedure of the machine is as follows:

The supply hopper accommodates approximately 200 blanks at one time, sufficient for about 20 minutes of continuous operation. Blanks feed directly by a patented feeder, using no suction, from the bottom of the supply stack through its own scoring rollers into the first position, where retractable glue wheels using a new principle of positive-position gluing apply adhesive to both sides of the blank. Next a plunger compresses the blank in this station to form a "U" board and the blank moves to the first forming section. The top of the box is then brought up while the plunger simultaneously forms the bottom half of the box. Tabs are then brought around the corners to complete the box and the cover is closed. At this point the machine employs for the first time the principle of a retractable plunger, retracting when the box cover is closing and returning to its main position when a new box is indexed into this plunger station, located at the far end of the machine. The trough or sealing section holds a stack of four boxes at all times. As newly finished

(*This article continued on page* 186)



COMPACT DESIGN of pneumatically operated machine is shown in this close-up view of blanks progressing through scoring, gluing, forming and sealing. Machine is installed with its non-delivery end against the wall to save space.

EASY PACKING of tray-wrapped tomatoes results from use of one-piece shipper, which holds 10 trays and is packed by sliding five trays at a time into carton.

ADVANTAGES of a set-up box are provided with the hinged corrugated shipper, yet these boxes are formed for immediate use, do not require stapling and eliminate the problem of storage.

Design

Single-service units boost sale of honey products

The headache of serving honey in commercial eating places is being simplified by the use of convenient, ¼-oz. individual service packages that are reported to be opening up new markets for honey products. Fingerlakes Honey Producers Cooperative, Inc., is distributing its processed "Honi-Spred" in miniature-sized, round, waxed paperboard units with tab lids.

These individual-portion containers are being used by hospitals, restaurants, hotel dining rooms, airlines, railways and caterers. The Coop sold a third of a million pounds of the processed honey product in the last year and the rate of growth of sales during the year was 16%, in comparison with a 9% rate of increase for retail packs of honey in general. With the individual packages, handling is no problem as the product is processed so that it does not run, drip or stick.

CREDIT: *Containers, Dixie Cup Co., Easton, Pa.*

Aid for wash-basin launderers

A new detergent packaged in individual units for use by travelers is being marketed by the Trav Co. Sold under the trade name, "Trav," the one-time-use packets contain just enough of the detergent for one basin of water. The mild detergent is suitable for washing all quick-drying fabrics such as nylon, orlon, etc., and is said to make thick suds in either fresh or salt water. The packets are water resistant and heat sealed. Made of a polyethylene-coated pouch paper, they are produced on four-side-seal automatic packaging equipment. The product is not only of interest to travelers, but to hotel, steamship-line and railroad operators who can leave Trav in bathrooms along with the customary soap and towels. A three-weeks' supply of 20 unit packages of Trav comes in a set-up paper box.

CREDITS: *Packets, The Dobeckmun Co., Cleveland, Ohio. Boxes, Service Box Co., St. Louis, Mo. Packet-making machine, Stokes & Smith Co., Sub. Food Machinery & Chemical Corp., Frankford, Philadelphia, Pa.*

Histories

More about families in the dairy-products trade

A new national trademark designed around a giant red check mark creates an effective family resemblance for the complete line of ice-cream and dairy-products packages distributed by members of the Quality Chekd Dairy Products Assn. Members of the association are independent manufacturers throughout the United States. Each member markets his products under the national Quality Chekd name, yet retains his local brand name. The new trademark achieves national unification of packages for all members, yet focuses attention on each individual member's local brand name. Illustrated are several packages in the N. L. and Mohegan Quality Checkd line.

CREDITS: *Milk and cream containers, American Can Co., New York; Ex-Cell-O Corp., Pure Pak Div., Detroit; Sealright Co., Inc., Fulton, N. Y. Cottage-cheese containers, Lily Tulip Cup Corp., New York, and Sealright Co., Inc. Square butter carton, Gaylord Container Corp., St. Louis, Mo.*

Silver cleaner in two markets

With the introduction of its new instant silver cleaner, the G. H. Coughlan Co., a long-established manufacturer of household chemicals, believed that packaging would be one of the key factors in outstripping its competitors in this new field. Turning the problem over to its packaging consultant, two decisions were made: to utilize a carton in addition to the glass jar and label, and to market the product under two brand names—Easy-Aid for distribution in hardware and housewares departments and Silv-r Glo for notions and silverware departments of department stores.

A dramatic red, light gray and black package for Easy-Aid gives it the impact and display value needed. Dignity and quality appeal are achieved for the more-feminine Silv-r Glo package with its rich pink and dark green coloring.

CREDITS: *Design, Gerald Stahl, New York. Cartons, William W. Fitzhugh, Inc., New York. Jars and closures, Owens-Illinois Glass Co., Toledo, Ohio. Labels, Lou Frey, Inc., Newark, N. J.*

Recut

BELLWETHER is the new Diamond Match box which sets the pace for design theme of the company's entire line. Distinctive combination of its basic elements —diamond, trade and product name and three colors— assure a memorable package.

SIMPLICITY of design is adaptable to all package shapes and sizes. Touches of Spencerian script soften the geometric format without slowing impact.

Four years ago the Diamond Match Co., New York, redesigned all the packages for its entire line of household packages.* Today the same packages have been redesigned all over again.

This second redesign program within a few years is one more striking example, illustrating pointedly the fast-changing trends packagers must recognize to keep abreast of modern merchandising. Packages that had sales appeal only a few years ago may be outmoded against today's competition. Companies with the courage to change with the times are the ones rewarded with an increasing volume moving off the shelves into supermarket shoppers' pushcarts.

Increased impulse buying of Diamond products in self-service stores is the new program's long-range target.

Diamond had brand prestige, having sold matches under the Diamond trademark since 1881. What it needed was new packages to carry over instant brand recognition to the other items in the line—paper napkins, paper towels, paper plates, toilet tissues, toothpicks, clothespins. In fact the name Diamond had become so fixed with matches in the public mind that the variety of Diamond paper, pulp and woodenware products tended to be overshadowed.

A striking family resemblance emphasizing strongly the famous diamond-shaped trademark on all the packages, it is believed, will confer on the entire line the advantages of the recognition earned by the company's matches. A shopper, for example, familiar with the match boxes will more likely be drawn to Diamond brand napkins or towels if her eye is attracted to a familiar trademark. Previous packages already had a family tie-up, but the company felt the relationship could be greatly sharpened.

A leading package designer was commissioned to tackle the job. His first objective was a simplification and strengthening of the basic diamond-shaped trademark, beginning with the match box itself, and modifying the same basic motif for all sizes and shapes of packages in the line.

The final result is an integrated line that promotes Diamond wherever it is seen with a simplicity that makes each package stand out on supermarket shelves crowded with competing items and provides the strong sharp contrasts so suitable today for television advertising, which Diamond has started in certain areas.

Essentially similar on all Diamond packages, the new motif features a dark blue diamond panel with the name "Diamond" in white across it. Below it or at one side, depending on the package shape, is a larger diamond-shaped panel which displays the product name.

The diamond figures are repeated on remaining package areas in many instances to make an over-all trademark pattern.

Adaptability of the design to all shapes and sizes is illustrated by its equally effective use on the cylinder

* See "Diamond Coordinates," MODERN PACKAGING, July, 1949, p. 108.

Diamond

Packages that were news four years ago now require a redress — so fast do cycles spin today

of roll towels, the horizontal carton for the waxed paper and the smaller match packages.

The historic Diamond color trio—red, white and blue—has been retained, but modernized by a new color formula. Instead of red and blue in shades of equal intensity, which had a tendency to blur, the new formulation provides a darker blue and a toned-down red. The deeper shade of blue improves legibility by eliminating contrast vibration. A feeling of quality is created by the visual contrast of the red against the chosen shade of blue—an optical illusion, according to the designer, which makes it register on the eye as royal blue, a traditional quality color.

The "receding" blue is easier to read while the softer red advances toward the eye. The softer red shade was selected by Diamond for appeal to women as a "cupboard" color without being too dainty for men. The avoidance of too much daintiness is a new trend in package design since recent market studies show that 68% of husbands now do some of the regular family grocery shopping.

The blue-red balance was selected as the brightest combination that could be effected without vibrating. It also gives greater contrast to white areas producing a cleaner-looking package.

The designer eliminated the eagle illustration in the trademark that had been continued on some of Diamond's packages after the 1949 overhaul. The eagle entered the line with companies later combined with Diamond, but has long since lost commercial significance as a trademark element.

Sans serif lettering has replaced all former curlicues to give a cleaner, smarter appearance. All letters in the Diamond name are in lower case to accent informality and friendliness with which the company wishes to characterize the packages for all of its products.

Where a "quality" designation is noted on the package, a Spencerian script is used. On the paper-napkin package, for example, the words "Embossed" and "White" are set in this script. For the kitchen-toweling package, the words "Wonderfully absorbent" take the script, which is keyed in a paler shade and relies on the characteristic slant of Spencerian for emphasis. Similarly, the waxed-paper carton proclaims in fine Spencerian hand, "Strong, Pliable, Transparent."

The variations in package size are responsible also for certain color variations. The smaller units of matches and woodenware products employ a stronger red than the more feminine, pastel red used on the packages for paper products. Where two different sizes or qualities of the same product are offered by the company, one

(This article continued on page 169)

BEFORE AND AFTER. Fussiness is replaced by strong emphasis on the instantly recognizable diamond symbols.

MASS DISPLAY of contrasting colors and design motif is a quick attention getter at point of sale.

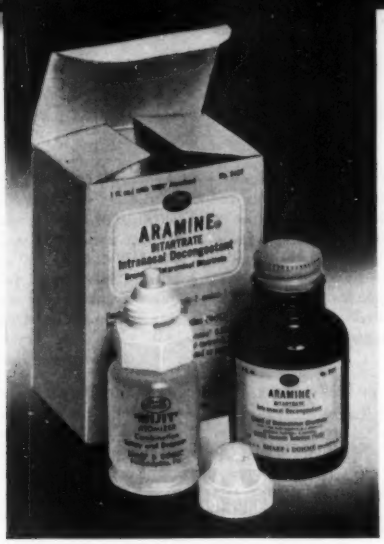
TWO-WAY NASAL TREATMENT

Sharp & Dohme builds dual function into squeeze atomizer-dropper that uses new combination of materials

DOUBLE USE of atomizer is shown. The Mijit functions as a squeeze-spray device when held upright and as a medicine dropper when held in inverted position. User inhales as bottle is squeezed, drawing air through slots above the hexagonal base of the atomizer cap and through the secondary spray nozzle.

Some doctors prefer that a nasal medication be sprayed. Others ask that it be applied drop by drop. With its new Mijit atomizer for Aramine, a bitartrate nasal decongestant, Sharp & Dohme, Inc., Philadelphia, has met the requirements of both preferences by developing what is believed to be the first successful application of the squeeze-bottle principle to a dual-purpose dispenser.

The Mijit may be used for applying the product either as a fine spray or as nasal drops. And in providing for this versatility, the makers have incorporated several unusual packaging features. The dip tube is probably the first packaging application of the styrene-rubber plastic (Kralastic), selected because of its ability to resist collapse and thus prevent the closing of the narrow channel in the tube. The ingenious construction of the polyethylene closure assures what is reported to be a safe, leakproof container for pocket or purse. And the construction assembly achieves new principles for atomizing action in a squeeze bottle for "cushioned spray."



NEW POLYMER used for flattened six-sided capillary dip tube is described as a mixture of rubber and polystyrene. Its rigidity guards against collapse of the tiny channel in the tube. The tube fits by friction in the spray nozzle, but its irregular cross-section leaves gaps through which liquid reaches the nozzle when atomizer is inverted for use as a dropper.

ASSEMBLED PACKAGE contains 1-oz. amber glass bottle of Aramine and atomizer. As both are approximately the same height, they provide a compact cartoned unit.

The Mijit atomizer is packaged with every 1-oz. bottle of Aramine. It is an exclusive Sharp & Dohme invention on which the pharmaceutical house holds two basic patents and is made of three different plastic materials—polyethylene, polystyrene and the new styrene-rubber copolymer.

When used as an atomizer, the Mijit delivers a fine mist-like spray of special characteristics which have been carefully engineered into the design. When inverted it will function as a dropper. The spray pattern is confined within a "sheath" of moving air which travels along with it, keeping the droplets of Aramine from becoming deposited inside the nostrils immediately adjacent to the spray nozzle. The droplets, carried within this surrounding cushion of air, are guided along the nasal passages so that they reach all areas requiring medication. Without the special air-cushioned spray pattern, Sharp & Dohme reports, this degree of medication would be difficult; it would otherwise require a forceful spray or an irrigation.

The atomizer dispenser consists of four parts: a 1-in.-diameter flexible polyethylene bottle, a polystyrene atomizing nozzle, a plastic capillary dip tube and a separate polyethylene screw cap for an airtight closure.

The flexible bottle with threaded finish is conventional in shape, except for an indentation just above the bottom rim which contributes springiness to the bottle walls. The polystyrene atomizing nozzle, however, required a somewhat complex mold. Its base is a hexagonal cap which screws onto the flexible bottle. The tubular nozzle rises from the base and is surrounded by a shorter, annular, secondary nozzle which supplies the enveloping stream of air to cushion the spray pattern. Air is sucked through this secondary nozzle from two horizontal vents in its base by the user, who is instructed to inhale at the same time that he squeezes the bottle.

The capillary dip tube has a flattened, six-sided cross-section and is held by friction inside the round primary nozzle. This "square"-peg-in-a-round-hole fitment leaves gaps through which air can escape from the bottle headspace into the atomizing nozzle when the bottle is squeezed, contributing to the production of a fine, misty spray. When the bottle is inverted, the gaps around the dip tube provide a direct path for the liquid itself to flow into the nozzle and thus permit the use of the inverted atomizer as a squeezable dropper.

The dip tube is molded of a new resin and synthetic rubber blend, described by the maker as an acrylonitrile-styrene resin modified with nitrile rubber. Its rigidity, combined with high tensile and flexible strength, serves to guard against the bending of the tube, which would collapse the very narrow channel. Inertness of the material and freedom from plasticisers qualify it for exacting drug use.

This new styrene copolymer has been on the market for about two years, but has only recently become available in quantity. A "family" of five different versions offers a range of characteristics accenting either its flexibility or rigidity. Toughness and flexibility at extremely low temperatures are said to be among its chief properties. Emulsions and dispersions of the new copolymer (called Kralac in these forms) are also available and are reported to be undergoing evaluation by a number of packagers for coatings and impregnations for paper, paperboard and cloth.

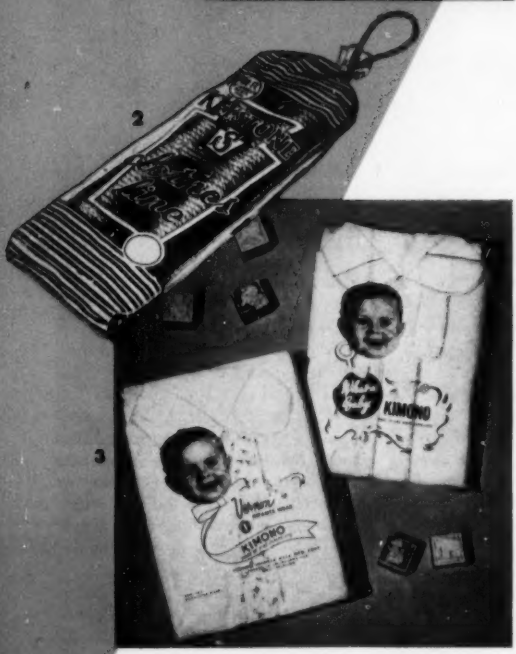
Airtight closure for the atomizer is obtained by a cone-shaped polyethylene screw cap. Very tight sealing takes place because a small projection molded into the inside of the cap at its apex is forced into the tiny orifice of the polystyrene atomizer nozzle when the cap is screwed down tightly.

The assembled atomizer, packed empty in a printed paperboard carton with each 1-fl.-oz. amber glass bottle of Aramine, is approximately the same height as the glass bottle and makes a snug cushioning fit alongside the bottle in the carton. A folder placed in each carton points out the advantages of the Mijit atomizer's special spray characteristics, reminds customers that it can also be used as a dropper if this is preferred and that the atomizer is sanitary because every part can be taken apart and washed to prevent possible spread of infection. The folder suggests using a fine wire to clean the capillary tube if it becomes clogged.

CREDITS: *Bottle and caps, Plax Corp., West Hartford, Conn. Capillary tube molded by Jessall Plastics, Berlin, Conn., using Kralastic styrene copolymer supplied by Naugatuck Chemical Div., of U. S. Rubber Co., Naugatuck, Conn.*

PACKAGING

1 Aluminum Specialties Co. has opened up increased merchandising opportunities for its stainless steel Holiday cookie cutters with this specially designed display carton which holds the cutters in its die-cut front panel. The carton enables the cutters, formerly sold individually, to be sold in units of six. It features a folding display panel for compact shipment and a hole at the top through which the units may be hung on a rack. Box, Sheboygan Paper Box Co., Sheboygan, Wis.



2 A new note in the packaging of clothes lines is this transparent cellophane bag, colorfully printed in red, white and blue, designed to let a loop of the line protrude from the neck of the bag so that it can be suspended in the store for good display and to encourage impulse purchases. The bag, used by the Schlichter Jute Cordage Co. for its Keystone Clothes Lines, has tiny vents impressed in the film to guard against breakage due to entrapped air. Bag, Cello-Masters, Inc., New York.

3 The illustration of a bright-eyed and round-cheeked baby, gravure printed on transparent cellophane wraps for flannelette kimonos made by Vernon Infants Wear Mfg. Corp., is reproduced from an actual photograph. Ribbon and toy motifs and colors are in keeping with the baby theme, with brand and product identity in pastel shades. Wrap, Shellmar Products Corp., Mt. Vernon, Ohio.

4 The Quaker State Foods Corp. has introduced a line of four frozen dinners ready to serve on heating—pot roast of beef, Swiss steak, turkey dinner and turkey pot pie—that come in compartmented aluminum platters covered with aluminum foil and are packaged in rotogravure-printed, cellophane-overwrapped cartons. The purchaser simply removes the carton and overwrap, places the covered tray in the oven, heats it 5 or 10 minutes, removes foil cover and serves. Trays and covers, Reynolds Metals Co., Louisville, Ky. Overwraps, Milprint, Inc., Milwaukee. Cartons, Sterling Wasser Box Co., Pittsburgh. Wrapping machinery, Hayssen Mfg. Co., Sheboygan, Wis.

5 Odd-sized ends and pieces left over as a by-product of slicing bacon make a profitable specialty item for the meat dealer when packaged in these window cartons designed to attract self-service shoppers. Packaged in this manner, they look like a quality product and can be priced accordingly. Recipes for use of these ends and pieces as a flavoring meat in soups, casserole dishes, etc., appear on the back panel of the packages. "Wallet-Pak" carton, Marathon Corp., Menasha, Wis.

PAGEANT

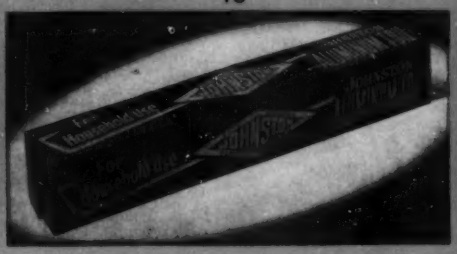
6 A quality point-of-purchase tag that combines pleasing appearance and hard-selling informative copy is now featured on the William H. Carter Co.'s fine lingerie. The tag, printed in two colors on rich tag stock, is notched and slit so it stays closed. It is attached by a slot that holds firmly, yet cannot injure fine fabrics. Copy tells of what the garment is made and how to wash it, describes garment and fabric features, emphasizes the Carter name and presents sales copy. Tag, Dennison Mfg. Co., Framingham, Mass., using Champion's Kromekote stock.

7 The Aressar Processing Co. saved 98 cents for every 100 lbs. of popcorn packaged when it switched to 4-mil polyethylene bags and printed corrugated boxes. The new packaging method represents only about 10% of production costs, whereas the former packaging accounted for about 25%. In addition, packing and handling time have been reduced. Four 12½-lb. polyethylene bags of popcorn are packed in each box, which has two corrugated dividers forming four sections to support and protect the bags. Bags, Dura-Lee Corp., Kansas City, Mo., and Chase Bag Co., St. Louis, Mo., Corrugated Carton, Hinde & Dauch Paper Co., Sandusky, Ohio.

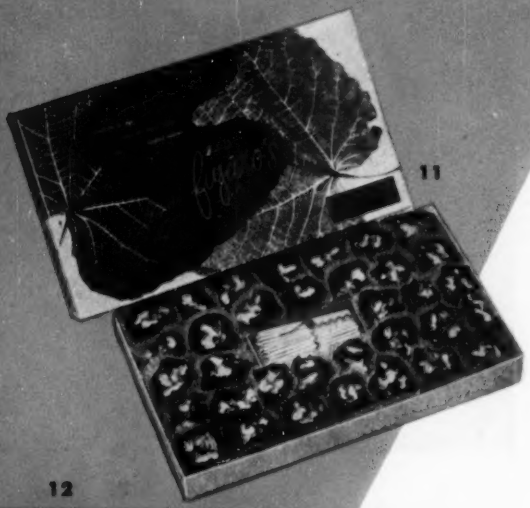
8 The new Elsie Daisy trademark (see *Modern Packaging*, Nov., 1952, p. 92) adapted to the lithographed metal closures for the Borden Co.'s new 12-oz. double old-fashioned glasses packaging Borden's Cheese 'n Bacon and Vera-Sharp Spreads illustrates how forcefully the design can be reproduced for use on all types of containers. The label gives prominence to the company and product names. Design, Frank Gianninoto, New York. Glass, Hazel-Atlas Glass Co., Wheeling, W. Va. Closures, White Cap Co., Chicago. Labels, U. S. Printing & Lithograph Co., Cincinnati.

9 Gold and white convey a feeling of elegance to the packages for the eight basic items in Ann Delafield's new cosmetic line, designed for women who are "tired of too-complicated beauty care." Both gold-colored foil and color-applied labeling (ACL) are used on the glass-packed products, with emphasis on the Ann Delafield name in gold on a white panel. The vitamin carton and powder boxes are foil covered with white printing. All metal closures and the lipstick case are gold colored, while the eye make-up kit is in white plastic.

10 Increased sales appeal for self-service merchandising keynotes this new package for Johnston Foil Mfg. Co.'s household rolls of aluminum foil. Printed in red,



PACKAGING PAGEANT



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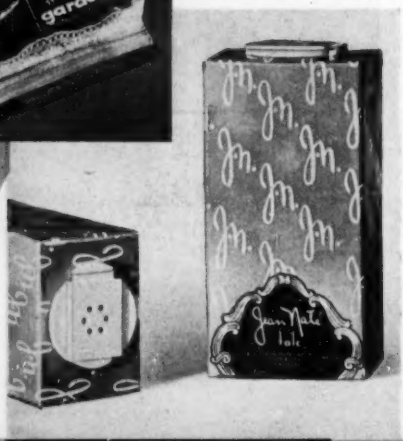

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white and blue, the folding carton is die cut along the top of the front panel so that the foil may be conveniently torn off to any desired length. The package holds a 25-ft. length of 0.0007-in. aluminum foil 12 in. wide. Package, Gercke-Allen Carton Co., St. Louis, Mo.

11 An over-all design of fig leaves provides a dramatic box design for the Van Rex Co.'s Figaros—a quality, high-priced fig confection. Space for toothpicks and sliced fig samples is provided in this new two-piece box. For product protection, the inner box is foil lined. Each fig is individually wrapped in Pliofilm and the box is Pliofilm overwrapped. Box, Advance Paper Box Co., Los Angeles. Pliofilm, Goodyear Tire & Rubber Co., Akron, Ohio.

12 This "Vapr-Sealed" gardenia package by Thomas A. Ivey & Sons, Ltd., of Canada, entered in the recent Canadian Consumer Package Competition sponsored by the Packaging Assn. of Canada, won the third-place Bronze Award and also took first-place award in the classification covering flowers, seeds and bulbs, garden fertilizer and other garden products. Bags, Toronto Foils, Ltd., Toronto.

13 A new patented plastic slide-top sifter that is easy to open and close has been adopted for the talc container introduced by Jean Naté, Inc. The circular plastic sifter is secured in the top of the easy-to-hold, square-shaped paperboard container. Cover paper for the container has an over-all chartreuse background with the company's "J.N." motif in white. Container and plastic sifter, Walter J. Jamieson Corp., New York.

14 Purchasers of potato chips are encouraged to buy a larger unit with this new twin package for Mann's Potato Chips. Freshness and flavor of the product are protected by two individually sealed cellophane bags packed side by side in a double-width outer cellophane bag. Only one of the inner bags need be opened at a time; the other bag remains sealed until needed, assuring longer freshness. The package measures 12 by 12 in. and contains two 6-oz. packages of chips. Bags, Lassiter Corp., Charlotte, N. C.

15 Full-color gravure printing on this folding carton for L. Buchman Co.'s Sylvan pillow creates an attention-getting display package. The illustration of a sleeping woman with her head resting on a pillow has unusual fidelity of color and tone, giving a quality package appearance for a quality product. The carton protects the pillow in shipment and serves the purchaser as a home storage container. Carton, Robert Gair Co., Inc., New York.

Jack Frost in miniature

Replica of familiar package on tablet wrapper becomes National Sugar Co.'s good will ambassador-at-large

TINY WRAP looks as much like the 2-lb. package as it was possible to make it within the small surface area. Vapor-set inks permit broad use of color without risk of odor transfer from the ink to the sugar.

Package recognition and friendly acceptance are obviously among the most valuable merchandising assets. No company today can afford to overlook what might seemingly be even the smallest opportunity to increase the memory value of its package.

The National Sugar Refining Co.'s 2-lb. Jack Frost sugar carton is one of the best known sugar packages. Until recently, however, the company never realized what a chance it had to increase recognition by reproducing a replica of the package design in miniature on its stock-wrapped tablets—the single-service units that are seen daily by millions in restaurants, hotels, planes and trains.

For years the individually wrapped sugar tablets were simply identified by prominent printing of the brand name, Jack Frost. The idea of the package replica came quite accidentally one day when the company was approached by the manufacturer of quite a different product who wanted to order custom-wrapped tablets with *his* package reproduced on the tablet wraps.

Thought National Sugar: Why not do this ourselves? The tablets, it turned out, although miniature in size, were in almost exact proportion to the 2-lb. carton.

The new wrappers—looking as much like the regular 2-lb. package as it was possible to make them on the small-sized wrap—have become a familiar sight wherever Jack Frost sugar is served in public dining places. Every time a user picks up one of these wrapped tablets of sugar, an impression of the regular package is registered consciously or unconsciously.

The only major problem encountered in adapting the carton design to the wrapper—a single sheet of paper in direct contact with the lump of sugar—was the selection of suitable inks. National Sugar found it advantageous to use vapor-set inks in the printing to avoid any risk of having odor transfer from the ink to the sugar, because the new design called for an ink overlay on approximately half of the outer surface. A linseed-base ink was not practical from the standpoint of odor-free protection. Another problem consisted of offsetting when the tablets were placed in take-out orders and sometimes came in contact with spilled beverage. This was overcome by using stronger pigments in the ink, which also gave better color control.

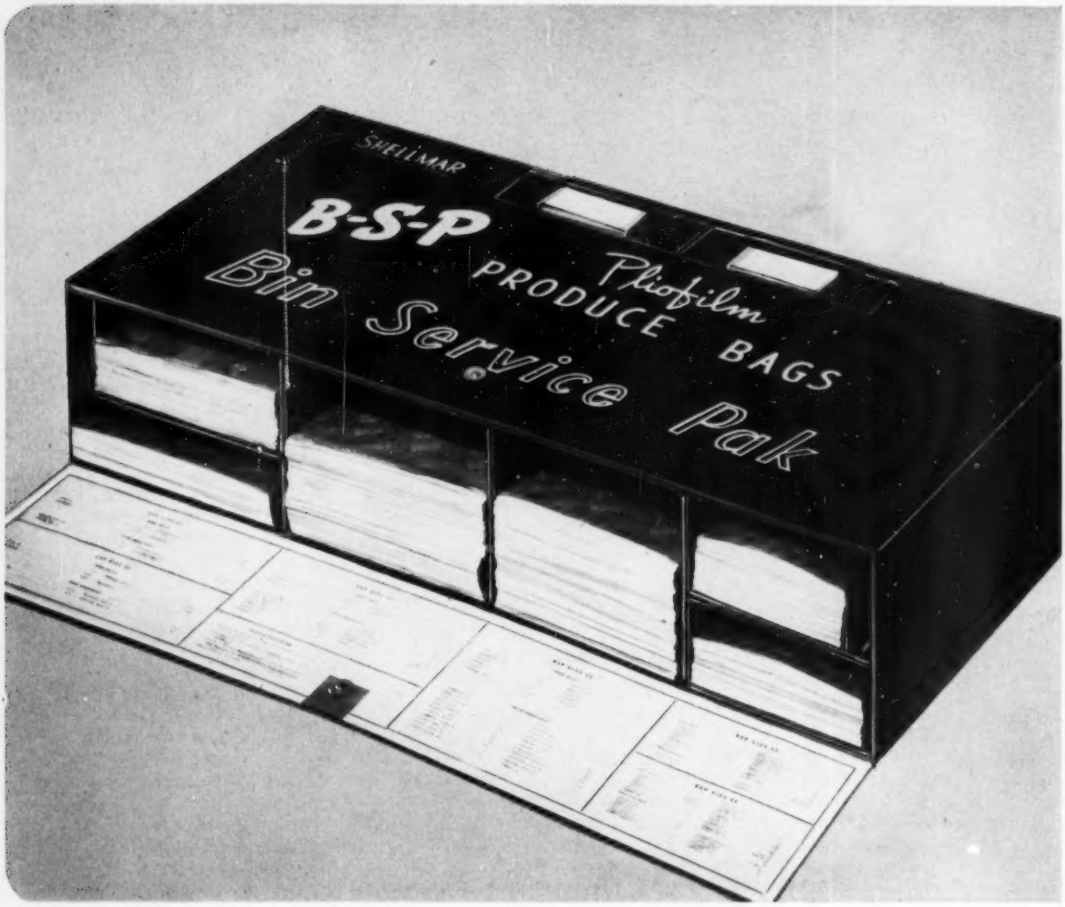
The new wrapper, duplicating the design of the regular carton of granulated sugar, features the trade name, Jack Frost, printed in blue on white panels at the top of the wrapper. The bottom half of the wrapper is dark blue, overprinted with small panels in red, and illustrates the Jack Frost boy, National Sugar's trademark.

Perforated lines circle the wrapper near the top and bottom to provide the company's easily stripped off opening band, and exclusive National Sugar convenience feature. The wrappers come to National Sugar preprinted and ready for placing in the hopper of the wrapping machine. Formerly, with one-color wrappers, some of them were printed in-plant.

In introducing its new wrapper to the trade, National Sugar employed a printed announcement showing the wrapper in color and featuring a blurb that read, "I'm not just a lump—I've got a colorful personality," accompanied by quick-paced copy describing the advantage of the new wrapper in building acceptance for Jack Frost.

National Sugar's sales strategy seeks to provide dealers with a packaged line that is increasingly better known. This makes it easier to persuade retailers to stock the product and it means that store patrons—who more and more use store locations and shelf displays as a shopping list—will favor this well-promoted brand because of its familiar look. Jack Frost in miniature on restaurant tables gives them a new reason to remember that brand.

CREDITS: *Wrappers, Dennison Mfg. Co., Framingham, Mass. Vapor-set inks, International Printing Ink, Div. of Interchemical Corp., 67 W. 44 St., New York.*



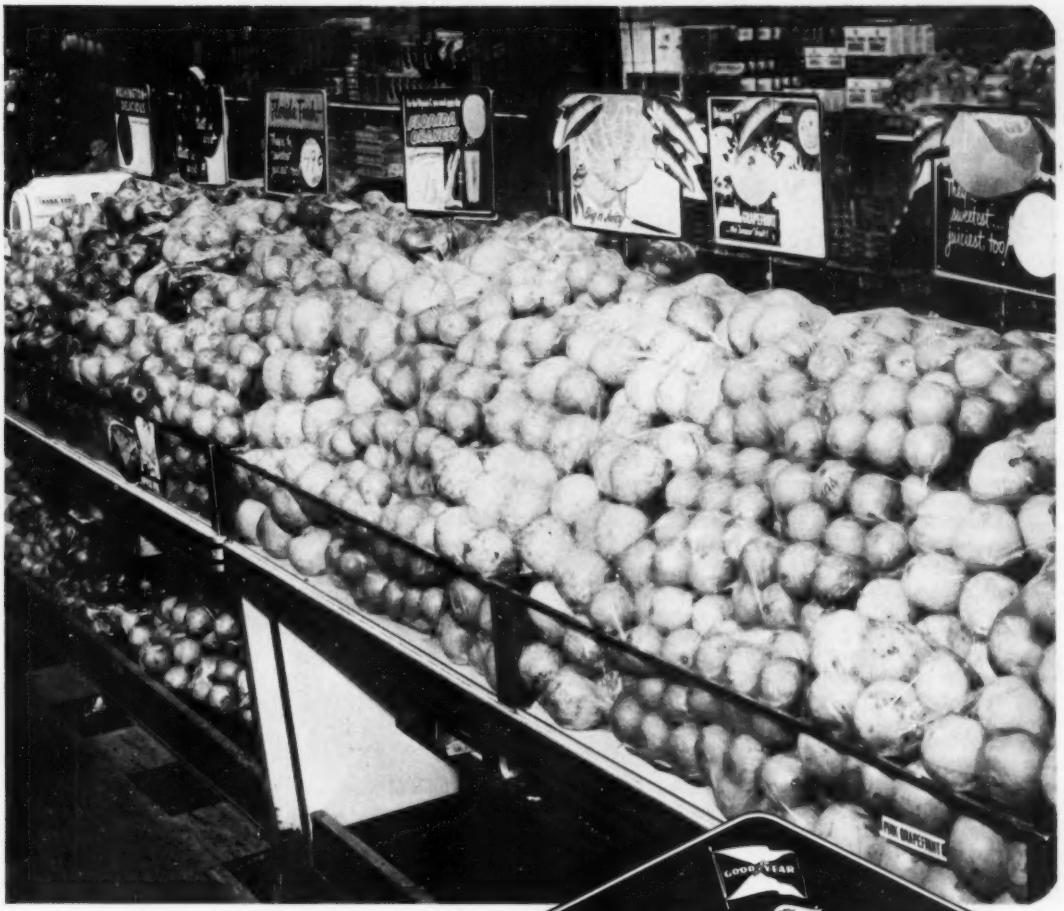
SETUP FOR A TWIN KILLING

Here's a two-in-one combination that offers a real opportunity to step up self-service sales and profits:

1. THE NEW LOW-COST PLIOFILM PRODUCE BAG—It's strong, tough, reduces breakage. Moistureproof—preserves quality. And its natural transparency speeds shopping and sales.

2. THE BIN SERVICE PAK*—Contains everything needed for fast, efficient self-service selling—3,650 PLIOFILM Produce Bags in six convenient sizes—

Eye-catching display of PLIOFILM wrapped produce means perfect visibility and quick, high-volume sales.



GOODYEAR
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4,000 bag fasteners—a generous supply of price-marking labels. All this plus a sturdy, water-resistant storage cabinet with a drop-lid, indexed to guide a pound by pound, item by item operation.

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*T. M. Shellmar Products Corp.
Pliofilm, a rubber hydrochloride—T. M. The Goodyear Tire & Rubber Company, Akron, Ohio

PACKETED

ONE-QUART ENVELOPES, three to a carton, are rapidly becoming a preferred packaging for powdered dry milk. Aluminum foil is the universally accepted material as the protective element in laminated envelope combinations. Fractional packaging idea is revealed by die-cut window in Tekko carton.

For many years bakers and other food processors have bought large quantities of non-fat dry-milk solids (dry skim milk), but the dry powder itself was virtually unknown to most consumers. Within the last three years, however, retail-size packages of non-fat dry milk have elbowed themselves into an apparently secure position on supermarket shelves. Producers have watched retail sales of the product climb from 6 million pounds in 1949 to 60 million in 1951 and to an estimated 100 million in 1952.

One aspect of this expanding market for non-fat dry-milk solids is the current popularity accorded to a new package style.

As recently as a year ago, dry-milk packaging ranged all over the lot in size, style and materials of construction.* Today a definite trend is noted toward the use of an individual heat-sealed laminated foil envelope holding enough powder (from 3 to 3.5 oz.) to make one quart of fat-free milk when mixed with water. The individual packets or envelopes are usually packed three to a paperboard carton; the carton may have a die-cut opening to show the customer that it is a multiple-unit package.

The basic aim of the new packaging is convenience to the housewife. In comparison with the 1-lb. (5-qt.) cans, cartons or jars, the fractional package offers accurate premeasured quantities and helps to eliminate the troublesome caking of unused portions that is common to larger containers which cannot be reclosed adequately to keep out moisture.

The packets provide the consumer with a quart unit—the quantity most women have come to associate with milk products. To prepare a quart of reconstituted non-fat milk the consumer simply drops the contents of a premeasured packet into a quart of water. Contents of the remaining two packets remain fresh and protected until she wishes to use them.

Acceptance of the new three-envelope cartons by an increasing number of dry-milk producers has been largely due to product characteristics. Caking may not only cause flavor deterioration, but tends to make the non-fat dry-milk solids difficult to measure and dissolve. Only by weighing can the housewife measure an accurate, exact quantity of the product from a 1-lb. container.

Consumers apparently are willing to pay a premium price for the convenience of the fractional package—eight to 10 cents a quart in contrast to an average of seven-and-a-half cents a quart in the 1-lb. (5-qt.) packages. The price differential, of course, is due to the cost of additional barrier material and additional handling for the fractional package.

Some packers are currently selling the product in both types of packages. Borden's Starlac, the acknowledged best seller, appears in both package styles displayed side by side, the company obviously studying consumer preference.

Because of its moisture protection—both from within and from without—aluminum foil appears to be the most

* See "Dry Milk, Problem Child," MODERN PACKAGING, July, 1951, p. 70.

DRY MILK

Producers turn to fractional packaging

for protection with convenience of premeasured 1-qt. quantities

universally accepted basic component for practically all of these new envelopes, which are used in a variety of different combinations of laminated materials.

Several envelopes are comprised of plasticized glassine laminated to the foil, combined with an extruded film coating of polyethylene as a heat-sealing and sanitary as well as a taste-free inner layer.

Another construction consists of cellulose acetate printed in reverse with aluminum foil and Pliofilm. A third material is described as heavy aluminum foil combined with a special super-calendered sulphite paper and an inner coating of a heat-sealing material. An outer layer of lacquer is used on at least one producer's package, although other packagers report having dropped the use of lacquer after finding that it sometimes gummed the heating surfaces of the sealer.

In each case, the laminated material is fed from a roll to a fully automatic high-speed machine which forms the envelopes, fills them and makes the final closure in one continuous operation.

The envelopes are formed in one of two styles, depending on the design of the forming-filling-sealing equipment in use.

Sanna Dairies, Madison, Wis., put its Sanalac brand in a package which is an oblong pillow shape, formed by first rounding the web into a tube with a heat-sealed lap seam up the back of the finished pouch. The two heat-sealed end closures, made in coordination with the filling process, are broad enough (approximately ⅝ in. wide) to prevent sifting at the corners. Sanna's pouch is printed with a repeat design to eliminate the need for accurate cut-off register.

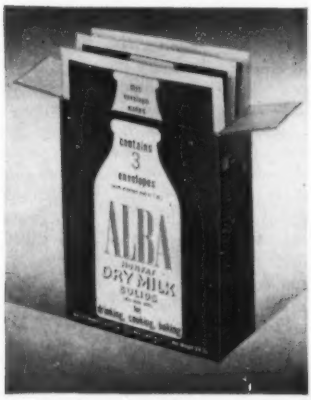
The pouch used by Borden's for its Starlac brand is a flat, face-to-face-seal type. It is also formed from a continuous web, but instead of being rolled into a continuous cylinder and cut off, the web is folded once lengthwise and cut to form nearly square envelopes with the fold at the bottom. Top and side heat seals of these flat pouches are usually made considerably narrower than the end seams of the pillow-shaped style.

Many flat face-to-face pouches are formed by full four-side sealing. The bottom seal reinforces the fold and is made so that no channel or tunnel is left for sifting at the corners. The Starlac package omits this extra seal. The printed designs used by most packers on flat pouches require accurate cut-off register.

A major problem of dry-milk packagers has been the tendency of the fine, powdery substance to coat the sealing surfaces during filling. This can be prevented by coating the heat-sealing inner surfaces with a thermoplastic coating with enough flow and body to absorb a certain amount of dry milk in the seal without losing its effectiveness. This problem is encountered only at the final closure made after filling the formed pouch, but governs specifications for the over-all heat-sealing surface. Some packagers thus employ extra all-over weight of heat-sealing substance to add strength and to reduce possible water-vapor transmission due to "pinholes" in the foil.

As recently as the summer of 1951 these laminated materials were either unavailable or too costly for the packaging of dry milk. When improved heat-sealing combinations laminated to foil were offered at competitive prices early in 1952, one-quart packets for dry milk began to appear on the market in quick succession.

For a number of years Sanna had a



MILK-BOTTLE SYMBOL is a strong selling device as used on Alba package. It immediately suggests the idea of milk and how easy it is to use the separate envelopes to make a quart of reconstituted product.

ACKNOWLEDGED LEADER in the field is Borden's Starlac. Packets for this brand are flat face-to-face-seal pouches made from continuous web folded once lengthwise. Printed design requires close register.

IMPROVED DESIGN emphasis is illustrated by old and new Sanalac packages. Formerly envelopes were not printed. Now they carry a repeat trademark device. The carton face is sharpened by simplified elements and the elimination of pictorial devices.

PREMIUM OFFER for Sanalac included six 1-qt. envelopes in a polyethylene shaker for reconstituting the powdered dry milk.

three-quart package almost identical to its present package, except for the material of which the individual packets were made. This earlier package was not completely successful from a protective standpoint, but Sanna was impressed by consumer acceptance of the envelope style. With the availability of improved materials, Sanna went ahead to make a better package in this form.

Weldon Farm Products, Inc., New York, has been pursuing another path. Since 1948 this firm's Alba brand had been packed in small, hermetically sealed metal cans, each holding enough powder for making one quart of dry skim milk.

The metal can was regarded by Weldon as the only completely successful quart-sized package at that time and it is still used by the company for export. Alba started to appear in laminated foil early last spring in New York and entered Philadelphia last fall.

At present Weldon is working on a version of its domestic laminated foil package to replace the small cans for Puerto Rican and South American shipments and has reported a number of flexible packages which appear to be successfully withstanding high temperature and humidity tests, although it considers most of them too expensive for commercial use or lacking in protection against insect and rodent attacks.

A typical packaging operation for the currently popular three-envelope carton package of dry milk is the forming-filling-sealing installation in Weldon's Minnesota plant, which is also equipped for packaging dry milk in a number of more conventional styles, in sizes up to 4½ lbs.

The output at this installation of 1-qt. sealed envelopes is at the rate of approximately 57 per minute. Cartoning and casing is performed by hand with the aid of a belt-conveyor cartoning table.

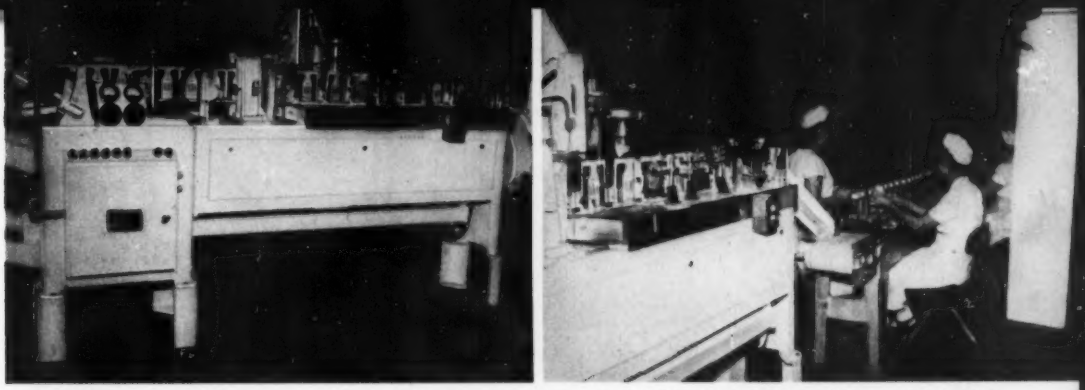
Cartons are of the reverse-tuck, unglued-flap style with flaps slit at the fold to provide a locking effect. A cartoning and casing crew of about half-a-dozen persons is required to handle the machine's output. The design of Weldon's forming-filling-closing equipment was selected for the ease with which parts may be cleaned or adjusted from floor level. Standard dairy-plant sanitation practices plus air conditioning are employed throughout the packaging area. It has been found desirable, Weldon says, to adjust the packaging machine to present a very flat package to the filler nozzle. This avoids entrapped air and messy blow-back during the fill.

Although Weldon executives are enthusiastic about the merchandising possibilities which have been opened for dry milk by package improvements, they point out that much credit must go to the dairy industry for improved drying techniques developed over the last 10 years.

Most milk which is currently being packaged for home use is dried by vacuum-spray methods which produce a powder that reconstitutes readily without lumping. The process requires less heat than older roller-drying methods, so that the reconstituted product now is reported to have little of its former cooked taste and also retains more of its protein content in nutritionally useful form. The improved product is suitable for easy home reconstitution without the use of a power mixer and its better nutritional values offer greater opportunity for the packager to promote the product to persons desiring a fat-free, high-protein diet.

Merchandising the package

A similar merchandising approach is quite general among packagers using the quart envelope fractional packages. Selling copy on the packages emphasizes (1) that the product is simply milk, with only the fat and water removed; (2) that the carton con-



AUTOMATIC forming, filling and sealing of individual 1-qt. envelopes (3.2 oz.) of Weldon Farm Products Alba brand is handled in company's Minnesota plant where output is 50 per minute. Envelopes are cartoned and cased by hand at belt-fed cartoning table.

tains individual envelopes, each holding powder to make one quart of fresh-tasting, fat-free milk and (3) that the powder may be mixed either by using a screw-top jar as a shaker or a bowl and an egg beater. The silhouette of a milk bottle provides an easily recognized symbol on many of the packages.

Some of the dry-milk packers favor cartons without windows to eliminate possible carton breaking in strenuous supermarket handling.

As competition has stiffened with the entry of new brands, several packages have been redesigned or had their typography and colors cleaned up. Weldon Farms recently sharpened the front panel of its blue, white and red carton by eliminating yellow lettering and has livened up the back panel to capture the user's attention more forcefully.

Weldon Farms feels that sales results prove its blue package with the bold white milk-bottle-shaped copy panel is about right now from a point-of-sale standpoint, but the company plans to continue varying back-panel copy and side-panel recipes to maintain interest.

Sanna's carton for nationally distributed Sanalac also came in for typographical face-lifting last summer. A much simpler, high-impact design has replaced a former one ornamented with drawings. Almost all brands devote carton space to some milk drink and baking recipes, and offer more recipes to the consumer who writes for them.

Despite the marked trend to the three-envelope cartons, there still appears to be a place for the 1-lb. bulk cartons, cans and jars. A & P's Whitehouse brand in a 1-lb. fibre can with friction lid and several new 1-lb. size brands in glass indicate that the consumer will have ample opportunity to demonstrate her preference for package convenience rather than price economy.

CREDITS: ***Filling machines**—Bartelt Engineering Co., 1900 Harrison Ave., Rockford, Ill., and Stokes & Smith Co., Sub. Food Machinery & Chemical Corp., Frankford, Philadelphia 24, Pa.* ***Alba packages**—Laminated foil, Rapinwax Paper Co., 150 26th Ave., S.E., Minneapolis, Minn.; folding carton, Milprint, Inc., 4200 N. Holton St., Milwaukee 1, Wis.* ***Meadow Gold packages**—Laminated foil, Shellmar Products Corp., Mt. Vernon, Ohio; counter display carton, Chicago Carton Co., 4200 S. Crawford Ave., Chicago 32, Ill.* ***Sanalac packages**—Laminated foil, The Dobeckmun Co., 3301 Monroe Ave., Cleveland, Ohio.* ***Starlac packages**—Folding carton, Container Corp. of America, 38 S. Dearborn St., Chicago 3, Ill.* ***Tekko packages**—Laminated foil, The Dobeckmun Co.; folding carton, Oakland Folding Paper Box Co., Emeryville, Calif.*

INDIVIDUAL ENVELOPES of 1-qt. quantity are being merchandised in a counter display carton for Beatrice Foods Meadow Gold brand.

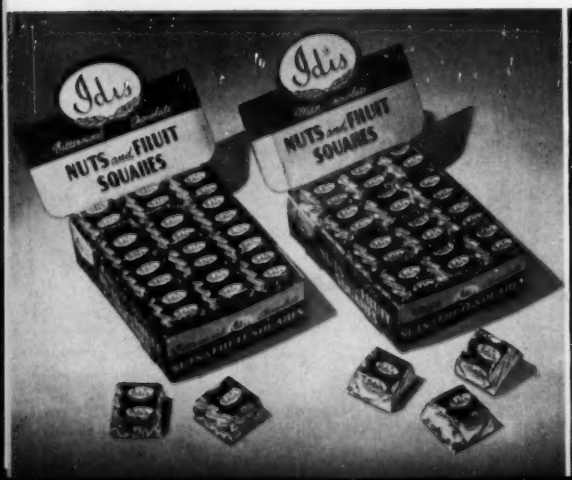
DIRECTIONS and suggestions for using the powdered milk are important elements of the package surface. All firms use carton sides and back-of-envelope space for this.

Park & Tilford's new permanent display piece for Booth's House of Lord's Imported Gin holds an actual bottle and a cocktail glass filled with a simulated dry martini, resting on a wooden mahogany-veneer tray. A strand of wire encircling the neck of the bottle and attached to the wooden backpiece makes it pilferproof. The card is rigid vinyl plastic. Display, Robert Kayton Associates, Inc., New York.

This paperboard display card holding 18 of Richard Hudnut's "Frozen Fragrance" containers of solid perfume is die cut and three-color printed. A line drawing of glamourous face and hands dominates the center of the card. Copy at bottom points up the $1 price of the product. Design, Summon & Summon, New York. Display, Latham Process Corp., New York. Containers, Richford Corp., New York.

DISPLAY

Idis Chocolate Corp.'s nut and fruit squares are merchandised in folding display cartons matching the foil wraps in which the products are packaged, giving a unified packaging program that is said to have increased sales substantially. Bittersweet-square wraps are blue foil, printed in red and white; the carton is blue, accented with yellow. Milk-chocolate wraps are red, white and gold, with carton in red, white and yellow. Cartons and wraps, Milprint, Inc., Milwaukee.



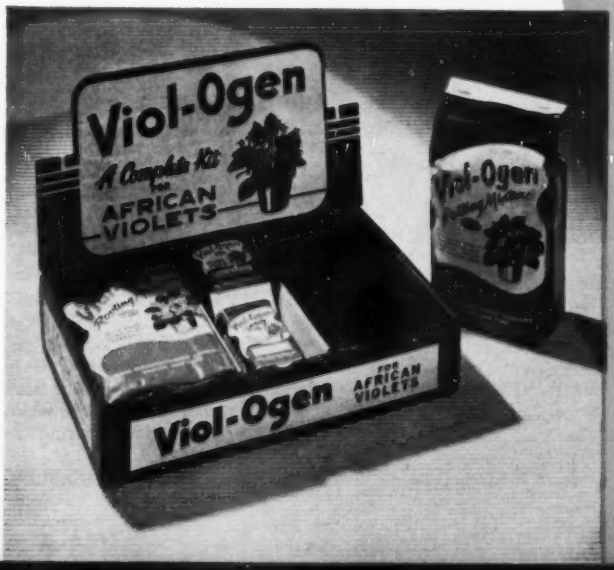
Packages of Marathon's Waxtex Sandwich Bags, a product of Marathon Corp., may now be orderly stacked at point of sale by use of this ingenious shelf stacker consisting simply of two strips of corrugated board. The illustration above contrasts the usual method of display with bags stacked neatly (right) in the corrugated strips, which prevent the packages from slipping. Two strips of printed corrugated board are packed with each case of sandwich bags. Corrugated stacker, Green Bay Box Co., Green Bay, Wis.

Bacon Products Co.'s display carton for its Nokof Quick Acting Cough syrup has a perforated fold-back lid, three-color printed in a design aimed at catching the eye when placed on drug- or grocery-store counters. The design reproduces three bears coming to a sudden stop on seeing the stop signal illustrated above the roadside sign advertising the product. Twelve individually cartoned glass bottles of the product fit into the carton. Display carton and individual cartons, Star Box Co., Chattanooga, Tenn. Bottles and metal closures, Owens-Illinois Glass Co., Toledo, Ohio.

Seven of Fay's Scalp Toner hair brushes are displayed in this cleverly constructed, cone-shaped display that gives product visibility from all angles. The paperboard unit is reportedly inexpensive and keeps shipping costs to a minimum. Design, Gilbert D. Snyder, New York. Display, Brooks & Porter, Inc., New York.

GALLERY

Four items to aid in growing African violets—rooting medium and potting mixture in bags, plant food in a canister and spray in a metal can—are packaged in Rose Mfg. Co.'s Viol-Ogen corrugated display kit. Interior partitions separate each item, hold them securely for effective display and protection in shipment. Display, Hinde & Dauch Paper Co., Sandusky, Ohio. Bags, Union Bag & Paper Corp., New York. Can and canister, American Can Co., New York.



Various quantities of the three most popular sizes of the Eastman Kodak Co.'s Kodak Roll Film fit into this combination display-dispenser which utilizes a new type of constant-tension spring for smooth and easy operation. The springs, coiling up on themselves, provide the same pressure on the first box as on the last and never permit the boxes to be held too tightly or loosely. The metal unit lays flat on the counter, but is only 2¾ in. high; thus there is no barrier between clerk and customer. Boxes are displayed under glass. A decal on the under side of the glass carries sell copy. Display, Advance Display Co., Chicago.

Snap-fold

BUILT-IN DISPLAY HEADER is readily seen at all angles, does not interfere with display of other merchandise and thus wins pro shops' good will. Separators between the balls also are cleverly used for display effectiveness.

COMPONENTS of box base are shown in various stages of set-up. Note that display header sets up as part of reinforcing box liner. Colorful ball separators continue to merchandise the Acushnet brand even when thrown away.

The road to package improvement often lies in a close, continuing study of package requirements and performance. A rewarding example is found in new folding boxes of patented construction adopted for Acushnet golf balls. Lower unit costs have resulted and selling performance has improved.

The new package, a two-piece telescoping carton, stores flat to effect a 68% saving in storage space in comparison with the package formerly used.

On the packaging line, the folding carton is snapped and locked into shape with a flick of the packer's hands. The self-locking feature of the carton is achieved quite simply by means of two glued-in end strips on the bottom of the carton that catch the fold-over carton ends and hold them in position. Use of this type of package has actually resulted in faster and easier filling, according to the Acushnet company.

A special feature of the new package—one that increases its retailing performance—is the incorporation of a space-saving, three-dimensional tilting display platform within the box. This consists of a flat insert liner, one end of which is scored to fold over and snap into the rectangular shape of the box. The flat part of the insert becomes a bottom liner for the box, while the box-shaped end forms a display ledge that juts up flush with the top edge of the carton.

The pop-in display can be seen from floor to eye level, although it does not project above the edge of the box. It serves the same purpose as a header, but requires no head space and therefore does not interfere with the display of other items in the retailer's case. This advantage obviously would be applicable to many types of packaged products other than golf balls.

Development

Prior to adoption of the new package, the Acushnet Process Sales Co. was marketing five brands of golf balls in as many different types of boxes. In line with the current trend in many packaging operations, which fights rising costs with packaging im-

display box Built-in display and self-locking features boost merchandising performance of golf balls

provements designed to reduce cost and increase efficiency, it was decided that a new look should be taken at requirements of the package and its performance.

The first steps were to analyze the package itself, along with the operations involved in handling, filling and shipping. A study of packaging requirements indicated that a practical folding carton would have to set up quickly and easily. Also, it would have to combine rigidity with rugged durability, since a dozen golf balls make a relatively heavy package. The design department of a folding-carton manufacturer accordingly undertook a study of these requirements and a research project to determine desirable merchandising features.

Three new construction designs were submitted and later revised. Then 200 production samples of each of the three boxes were produced for testing. In production and shipping trials, results were satisfactory and the one box that promised the best merchandising potentials was chosen for all five brands of Acushnet golf balls. After printing and boxboard specifications were determined, the box was turned over to a designer. At this point it was decided that not only were the five boxes to be indentical in construction, but that family resemblance was to be maintained in design.

The new boxes all employ at least two thicknesses of board on the sides and ends. They are entirely prefolded. The box is deep enough to enclose the golf balls completely, whereas the box formerly used was a shallow type that allowed a portion of the golf ball to be displayed above the level of the box, but at the sacrifice of package strength. The new box, because of its double-wall construction and greater depth, provides additional strength. At the same time it permits the use of a substantially lighter caliper of board. The bottom of the box is reinforced by the insert liner, previously mentioned, and rigidity is achieved by the support that the glued-in locking strips give to the fold-over ends of the carton.

Retailing

Research by the carton maker in golf shops—the only retail outlets for Acushnet golf balls—spotlighted the following features that appeared most essential from a merchandising viewpoint:

1. The package should be easy to handle at the retail level. It was found that the professional golf shop usually discards the cover when putting a box of golf balls on display. Some device was needed, therefore, to assure effective display.

2. The box should be compact to meet the competition for display space.

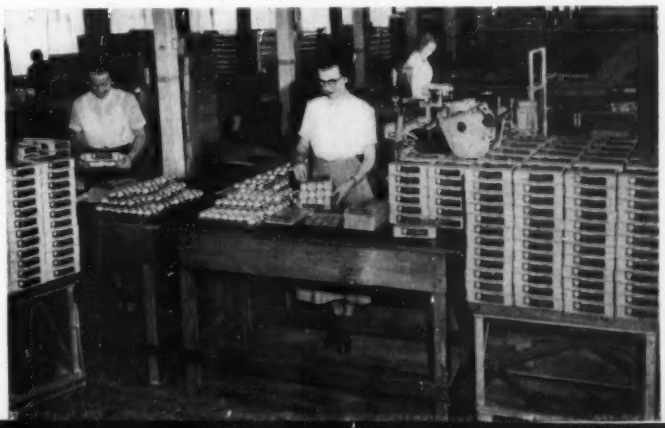
3. All upright display panels should be eliminated. Research showed that golf balls are normally displayed in a show case and that a definite feeling existed about panels or headers that tend to hide the products behind them. Such panels are often eliminated by the retailer, who rips them off the box. For these reasons, it was concluded that the space-saving, three-dimensional, pop-in display insert would have special merit. It would eliminate a dealer problem, since it would show consideration for the value of his good will and not encourage removal of the panel from the box to lessen the sales effectiveness of the package.

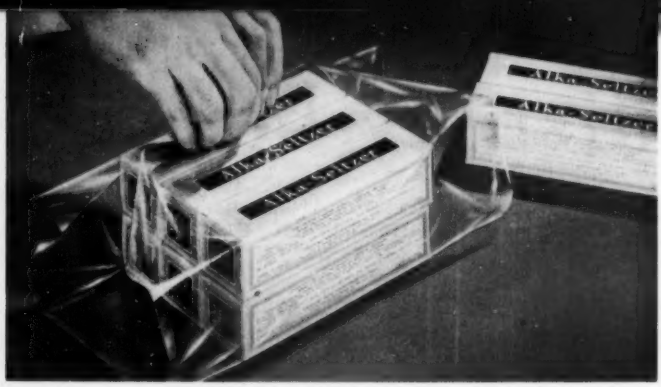
The principal demand from a design standpoint was for a display carton to create a strong and friendly impact at the point of sale. Each of the five different balls was given a color code and large areas of easily identifiable color were employed. Rectangular color blocks, in three contrasting shades, dominate the display ledge and the insert liner displays a checkerboard pattern of squares, alternating a picture of a golf ball on a colored background with squares of a different color that bear short selling copy. When golf balls are sold from the box, sections of the bottom liner thus exposed do an effective selling job.

Four three-unit packs of golf balls are packaged in each display carton. Each unit is assured of identity within the box by a cellophane overwrap for each group of three golf balls and by printed paperboard separators that prevent the individual balls from rubbing against each other.

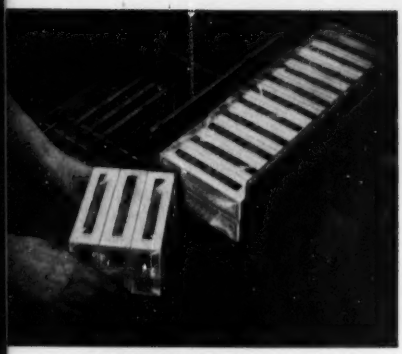
It was decided that the separators could be designed to take on display function, as well as a protective one. Accordingly, the separators have a tilted, three-dimensional, snap-open construction. Shaped like a "T" and *(This article continued on page 185)*

ORDERLY PRODUCTION at a rapid rate is achieved with space-saving snap-fold cartons. Three-ball trays are cellophane overwrapped on machine shown in background. Several girl operators set up boxes, load them rapidly by hand.

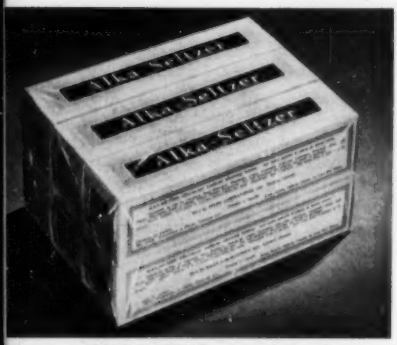




TOUGH WRAPS of cellophane are secured lengthwise by finger pressure along the glue stripping.



SEALED BUNDLES come off end of machine ready to be packed for shipment to their destination.



HALF-DOZENS wrapped in cellophane cut materials costs and are easier for the retailer to store.

SIX BUNDLES of the six-unit packs fit perfectly into a carton, are easy to handle and to pack.

Alka Seltzer bundles

Canadian branch discards chipboard shelf container in favor of a transparent wrap

Where Canadian branches of United States parent companies are concerned, it would appear logical to assume that any changes affecting packaging of the product in Canada would necessarily come from the American side of the border. In actual fact it usually works out in just that way. However, here is an example where the trend was completely reversed with beneficial results on both sides.

With Canada more fortunate in its supply of cellophane, Miles Laboratory, Ltd., Toronto, the Canadian subsidiary of the United States firm manufacturing Alka-Seltzer, recently began bundling half-dozen lots of both the large- and small-sized packages of their product in cellophane. Previously these were shipped in specially made, more expensive chipboard containers. Representatives of the company's cellophane supplier made a series of tests in the Miles plant this last summer and proved to management's complete satisfaction that cellophane bundling would result in substantial savings both in the cost of packaging materials and in shipping costs.

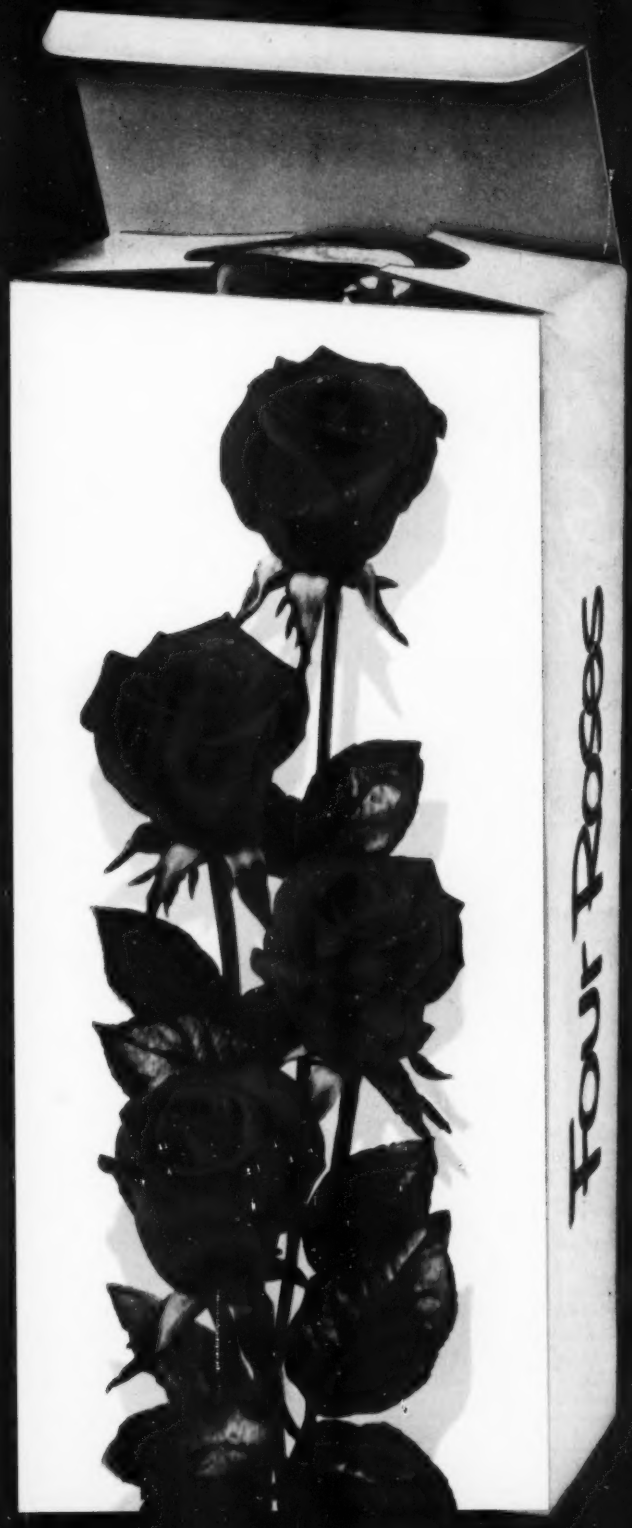
Using up-to-date bundling machines, Miles Laboratory workers have found the new packaging process to be much more efficient, according to plant superintendent K. J. Doyle.

The cellophane wraps used in the bundling process are individually glued on the bottom for faster packaging. The cellulose glue is applied automatically at the correct place, according to the size of the package to be wrapped, just before each wrap sheet is cut. The glue strip is secured by finger pressure as the wraps are put on by practiced hands. The ends of the wraps are heat sealed as part of the bundling-machine operation. Recently the plant extended the new method to include the company's vitamin-pill lines with equal success.

To date retailers have been very complimentary in their comments regarding this innovation, according to the company, as it makes removal of the packages on arrival at their stores a simpler task than it was previously with the cartons. Bundling of the packages in half-dozen lots also lends itself to easy storage, as well as to more effective product display.

Latest news concerning this development is that the parent company in the United States, now having ample supplies of cellophane, is currently following the lead provided by its Canadian branch in using cellophane for product bundling.

CREDITS: *Cellophane wraps, Canadian Industries, Ltd., Cellophane Div., Box 10, Montreal, Quebec. Bundling machine, Miller Wrapping & Sealing Machine Co., 18 S. Clinton St., Chicago 6, Ill.*



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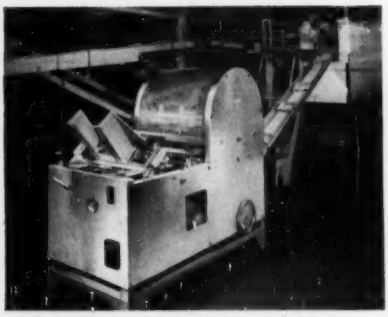

One of a battery of our PA Carton Forming Machines in the plant of Mars, Inc.

The machine occupies only 3'x 6' of floor space — fits in perfectly with any production line.

MANY companies are making really amazing savings by producing their cartons right in their own plants on our Model PA Carton Former. This machine makes sturdy, firmly glued cartons from die-cut blanks, which cost far less than factory-made cartons or blanks that are set up by hand.

AND THERE'S NO LABOR PROBLEM — for the PA Carton Former requires no operator — merely has to be kept supplied with blanks and glue. Since its magazine holds from 500 to 1,000 blanks, one person can attend to feeding and do other useful work besides.

The PA Carton Former operates on the principle of continuous motion. Gluing time is nine times longer than in other machines, despite its high speed — up to 102 cartons a minute. Specially designed forming plates result in greater accuracy, permitting perfect registration of printed matter on the carton. You have a quality carton in keeping with the quality of your product.

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PACKAGE MACHINERY COMPANY
CARTON DIVISION
SPRINGFIELD, MASSACHUSETTS

Tensile strength in waxes

Micro added to paraffin types is not always desirable and may actually be detrimental. BY ROY T. EDWARDS*

An important portion of the enormous consumption of dairy products in the United States is packaged in wax-coated paper cartons. The success of these packages is due in some part to the effectiveness of paraffin wax in rendering the paper container impervious to moisture and from the standpoints of appearance, odor, ease of handling and performance wax is indeed admirably suited to the purpose. The fact that about 175 million pounds of refined paraffin wax, or 20% of the total U.S. production, is being consumed annually for packaging of dairy products gives some impression of the wide acceptance not only of paper cartons in the dairy trade, but also of paraffin wax as the desirable coating material for them.

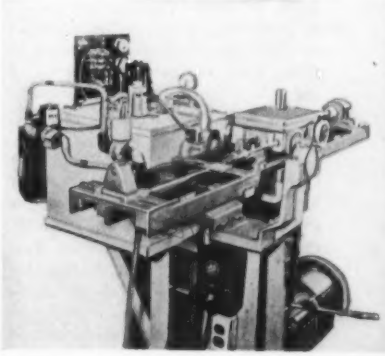
The breadth of the dairy market and the critical position of wax as the protector of the package has brought increasing attention to the wax itself and the effect of its composition on its properties and the effect of those properties in turn on the finished packages. One phase of this interest has centered on the tensile strength of paraffin wax and the possibilities of enhancing this property by the addition of small amounts (2 to 5%) of microcrystalline wax—a procedure which is so often effective that it has become routine with some dairies. The material presented in the following paragraphs shows that this procedure, while effective in increasing the tensile strength of some relatively weak paraffin waxes, may actually reduce the tensile strength of other special high-strength waxes. In effect, this material shows that these high-strength paraffin waxes are indeed natural blends of microcrystalline wax and paraffin wax produced in the refining processes by the correct choice of base stocks and treating procedures, not by the cruder methods of mixing microcrystalline wax with paraffin wax.

While the dairy industry is a fairly special segment of the broad packaging field, the same characteristics of waxes are involved in any packaging use of paraffin-coated paper and paperboard materials. The information developed in this study should therefore be considered as applying equally to all packaging uses of these materials.

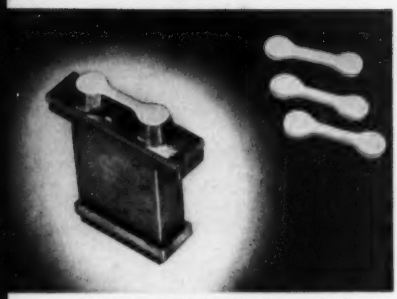
There is little doubt that the addition of small quantities of microcrystalline wax does have a beneficial effect on the tensile strength of many paraffin waxes—a property very important in packaging end uses. For instance, work done in Socony-Vacuum Laboratories as long ago as 1938 definitely established the beneficial role of micro wax when added to conventional paraffin as far as tensile strength was concerned. It was found that the addition of 3 to 5% of micro wax could increase tensile strength to a maximum, but that the further addition of micro wax would be detrimental and result in a loss in strength. In effect, when tensile strength was plotted versus the percentage of microcrystalline wax in the blend, an optimum was obtained in the resultant curve; continued addition of micro wax was shown to reduce the tensile strength of the blend well below that of the original paraffin.

But further investigations now show that the widespread addition of micro wax to paraffin, without regard to the paraffin wax in question, can no longer be recommended as a means of improving tensile strength. With some commercial waxes available today possessing tensile strength in the

1. **INCLINED PLANE** tensile tester permits the application of a load that increases linearly with time to wax test specimens.



* Research Associate, Socony-Vacuum Laboratories, Brooklyn, N. Y.



2. WAX SPECIMENS of dumbbell shape are stamped out with the die shown from a sheet of wax just below the melting point.

neighborhood of 400 lbs. per sq. in. (Tinius-Olsen procedure), the addition of even small quantities of micro wax, rather than improving this property, *can actually be deleterious.* This is due to improved methods of processing and a better understanding of wax composition and its effect on the physical properties of the wax.

There are many chemical structures possible in a typical paraffin wax and while two waxes may appear identical to the eye and in fact compare closely when tested for such routine properties as melting point, color, viscosity, etc., actually wide differences in basic composition may exist depending on the crude source and the techniques selected for processing. Most crudes contain, in addition to the normal paraffinic structures common to refined wax, solid hydrocarbons of isoparaffinic and ring structures commonly associated with micro waxes. To a large measure, the relative proportion of basic wax types present will depend on the crude source, that is, it will reflect the inherent composition of the oil from which the wax has been separated. But, as a second point, by careful selection and control of processing, it is possible to obtain an optimum combination or blend of these waxy components in terms of ultimate performance requirements. In effect, then, such a wax is actually preblended.

In the present work, a partial analysis of three commercial paraffin waxes has been conducted and the mechanical properties of each, alone and with the addition of microcrystalline wax, have been investigated. The results confirm that the addition of microcrystalline wax to conventional paraffin waxes is a reasonable procedure

TABLE I—CHARACTERISTICS OF WAXES

	Wax A	*Wax B*	*Wax C*	*Wax D*
Tensile strength, Tinius-Olsen, lbs./sq. in.	352	276	208	440
Oil content, %	0.12	0.12	0.34	0.03
Melting point, Sayb., deg. F.	123.75	125.75	124.5	125.5
Color, Saybolt	+30	+30	+30	+15
Viscosity, S.U.S. @ 210 deg. F., seconds	37	37	37	38

and one that can be recommended as a means of making waxes of inferior quality yield good performance. However, this approach is not universally useful and when applied to engineered waxes of inherently high quality, the results can be illusory or even detrimental. If a realistic appraisal of the experience of container manufacturers is coupled with the data reported here, in which performance and tensile strength are related to wax composition, it appears that certain high-quality waxes must be considered as preblended to approximately the same degree as those to which microcrystalline wax has been added after manufacture.

Two of the three waxes studied were conventional products, while the third was a product of the same nominal grade but of exceptional tensile strength which was attained by careful selection of raw materials and processing procedures. All products were subjected to fractional distillation which provides a means of classifying the hydrocarbons present by molecular weight. The properties of the distillation fractions were determined with special attention to refractive index and melting point. Reference of these data to established relationships between the refractive index and melting point of the normal straight-chain paraffin hydrocarbons has made possible qualitative conclusions concerning the chemical composition of the waxes. The effect of the addition of microcrystalline wax on the tensile strength of each of the waxes has also been investigated.

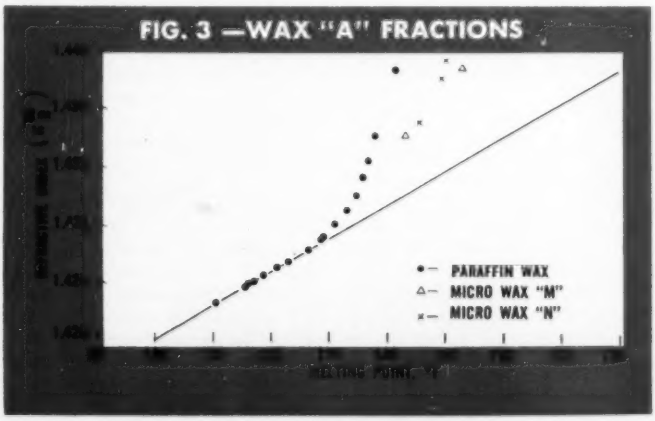
Experimental

Methods

Distillation. Distillations were carried out at 0.15-0.30 mm. absolute pressures. The fractionating column used had an efficiency of 4-5 theoretical plates under the conditions used and was operated at a 1:1 reflux ratio.

Refractive index. This property was determined at 80 deg. C. with a Zeiss Abbe-type refractometer maintained at this temperature by circulating water from a constant-temperature bath.

Melting point. This was determined by catching a drop of molten wax on a thermometer bulb and rotating the thermometer horizontally with the bulb within a small flask until the wax set. It is possible to check results



within 0.5 deg. F. and results agree well with those obtained by the Saybolt method.

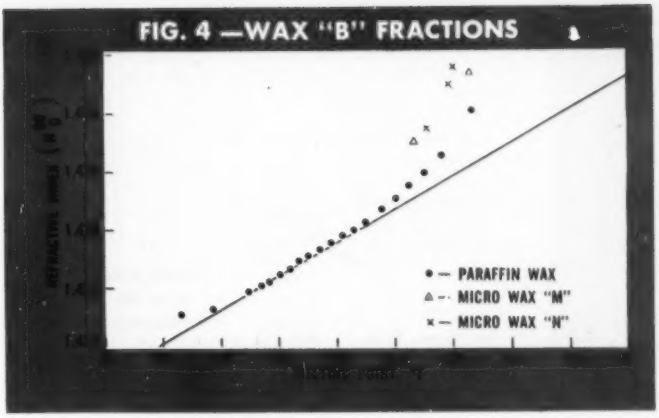
Tensile strength. Tensile strengths were determined on the waxes and wax blends with an inclined plane instrument. This is shown in Fig. 1. This instrument consists of a three-railed track upon which rides a car capable of being loaded with 0 to 100 lbs. in addition to its own weight of 6¾ lbs. The track can be tilted from the horizontal to an angle of 30 deg. with the horizontal. Power from a motor is applied through a yoke so that the tilt of the track increases in such a manner that the load on the sample increases linearly with time.

One end of the sample is held at the end of the plane by a jig attached to the center rail. The other end is held in a jig attached to the car. As the track inclines, the stress on the sample increases linearly with time until the sample breaks. By use of suitable detecting and amplifying equipment, both the tilt of the rails and the movements of the car due to elongation of the wax specimen are recorded automatically on a recording potentiometer. The tensile strength is calculated from the load on the car, the angle of tilt and the cross sectional area of the specimen.

Samples were stamped out with a die from a sheet of wax. The temperature of stamping was somewhat below the melting point of the wax where the wax had set, but was still plastic. The die and test specimens are shown in Fig. 2. The cross section of the shank averaged 0.18 by 0.13 in. and was measured accurately for each specimen.

The tensile strengths of the waxes, as received, were also measured by the Tinius-Olsen method.

Other measurements reported were made by conventional ASTM procedures.



Raw Materials

Wax A is a paraffin wax of inherently high tensile strength. The raw materials and processing conditions are selected and controlled to yield maximum performance qualities in the finished wax.

Waxes B and C are paraffin waxes manufactured by conventional procedures and of the same melting-point grade as Wax A.

Wax D is a paraffin wax to which has been added a certain amount of microcrystalline wax to make it more suitable for dairy use.

The results of conventional tests on each product are given in Table I.

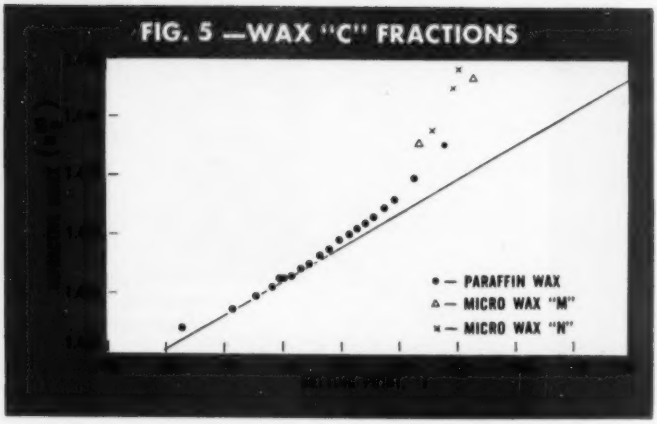
Results

The information obtained from distillation and from melting-point and refractive-index measurements on the fractions obtained are given in Tables II, III and IV. The refractive index is plotted versus melting point (circles) for each fraction of the three waxes in Figs. 3, 4 and 5. Similar data (triangles and crosses) on the lower boiling fractions obtained from distillation of two microcrystalline waxes, indicated as Microwax M and N, are included for comparison. The solid line of these figures has been found to represent the relationship between the refractive index and melting point of distillation fractions of wax after successive recrystallizations, which it is felt have insured removal of all hydrocarbons except normal paraffins. Deviations of the properties of wax fractions from the relationship expressed by this line† can be taken as indicative of the pres-

TABLE II—WAX A

Cut No.	*Vapor temp. corr., deg. F.*	*Weight, %*	*Cum. wt., %*	*Melting point, deg. F.*	*Refrac. Index*
IBP	705				
1	775	4.82	4.82	110.5	1.4227
2	780	4.93	9.75	115.5	1.4237
3	782	5.12	14.87	116.0	1.4239
4	790	4.99	19.86	116.5	1.4239
5	793	5.01	24.87	117.0	1.4240
6	795	5.05	29.92	116.5	1.4239
7	800	5.04	35.96	116.0	1.4240
8	815	4.91	39.87	118.7	1.4245
9	817	4.99	44.86	121.0	1.4250
10	826	5.04	49.90	123.0	1.4254
11	840	5.01	54.91	126.5	1.4263
12	857	5.03	59.94	128.5	1.4270
13	872	5.01	64.95	129.0	1.4272
14	880	5.00	69.95	131.0	1.4281
15	886	5.02	74.97	133.0	1.4290
16	906	5.04	80.01	134.5	1.4300
17	921	5.13	85.14	135.5	1.4313
18	927	5.06	90.20	136.5	1.4323
19	944	5.04	95.24	137.5	1.4341
Bottoms	–	4.76	100.00	141.0	1.4386

† The straight line obtained for pure synthetic normal paraffins appears to be approximately 0.0010 unit of refractive index below any line obtainable from fractions of wax even when these have recrystallized sufficiently often to insure removal of all but normal paraffin structures. There is no certain explanation of this anomaly at present, but it has been observed by at least two other workers. It seems probable that it is due to the non-additive nature of one or both of the properties in question. The melting point seems more probably to be the affected property since depression of the melting point of mixtures below that of the average expected for the components is a familiar thing.



ence of hydrocarbons other than normal paraffins and the extent of deviation is a measure of the proportion of "non-normal" hydrocarbons present.

Table V gives the results of tensile-strength and elongation measurements on the three waxes alone and admixed with 3% microcrystalline wax. Results obtained at 40 deg. F. and 70 deg. F. are reported. The superior qualities of Wax A over the other two waxes when tested alone is to be noted, as is the close similarity between the performance of this wax alone and that of the other two after 3% microcrystalline wax has been added. The probable deleterious effect of microcrystalline wax on Wax A is also apparent. The properties of Wax D, a representative blended wax, are given for comparison.

The tensile strength of the reblended distillation fractions of Wax A was determined and also that of a blended 95% overhead. The results on these samples, following de-oiling at zero deg. F. with methylene dichloride, are given below:

	Tensile strength lbs./sq. in. (70 deg. F.)
All fractions	381
95% overhead	340

Discussion

Paraffin wax consists predominantly of normal straight-chain paraffin hydrocarbons. Other types of hydrocarbons that have been assumed to be present, usually in low concentration, are branched chain isoparaffins, aromatics and naphthenes with both of these latter carrying long side chains. Microcrystalline waxes have been assumed to contain higher proportions of branched and ring compounds and, indeed, some feel that these rather than the normal paraffins are the predominant hydrocarbons of these waxes.

It is possible to draw reasonably valid conclusions concerning the composition of a wax, particularly narrow distillation fractions, from certain of its physical properties since the several hydrocarbon types differ markedly in certain of these. For a given molecular weight, the melting point of the normal paraffins is higher than that of other types. The refractive index and density of aromatics are highest, those properties of naphthenes intermediate and those of normal and isoparaffins lowest at a given molecular weight.

It has been found that plotting the refractive index vs. the melting point gives a convenient and reasonably accurate means of establishing the presence of structures other than normal paraffins in a wax fraction. Approximately a linear relationship is found between these two properties of normal paraffins. For wax fractions, the solid line of Figs. 3, 4 and 5 is believed to express well this relationship. Recrystallization of wax fractions, which insures removal of all but normal hydrocarbons, yields products whose properties agree with the relationship expressed by this line. Further recrystallization only increases both the refractive index and the melting point of these fractions while maintaining the same relationship between these properties.

Referring to Figs. 3, 4 and 5, it will be noted that the lower melting fractions follow the line established for normal paraffins quite closely, while higher fractions diverge to a greater or lesser extent. The extent of the divergence is such that, on the basis of known properties of synthetic compounds, it must be assumed that aromatics, naphthenes and isoparaffins are present in the higher fractions. It is not possible to establish any quantitative relationships at present.

The relationship between the higher fractions of paraffin waxes and the

TABLE III—WAX B

Cut No.	*Vapor temp. corr., deg. F.*	*Weight, %*	*Cum. wt., %*	*Melting point, deg. F.*	*Refrac. Index*
IBP	645				
1	718	5.30	5.30	103.0	1.4222
2	722	5.30	10.50	108.5	1.4225
3	740	4.79	15.29	114.7	1.4238
4	743	4.96	20.25	117.0	1.4242
5	755	5.09	25.34	118.2	1.4244
6	761	4.86	30.20	120.2	1.4250
7	769	5.06	35.26	122.0	1.4253
8	774	4.79	40.05	125.2	1.4259
9	780	4.91	44.96	125.0	1.4262
10	787	5.06	50.02	127.0	1.4266
11	796	5.05	55.07	128.7	1.4271
12	805	4.99	60.06	130.7	1.4276
13	814	5.01	65.07	132.7	1.4280
14	826	5.01	70.08	134.7	1.4286
15	841	5.04	75.12	137.5	1.4294
16	853	5.06	80.18	140.0	1.4302
17	868	4.89	85.07	142.2	1.4311
18	879	5.03	90.10	144.7	1.4320
19	–	4.84	94.94	147.7	1.4332
Bottoms	–	5.06	100.00	153.0	1.4363

TABLE IV—WAX C

Cut No.	Vapor temp. corr., deg. F.	Weight, %	Cum. wt., %	Melting point, deg. F.	Refrac. Index
IBP	661				
1	713	4.98	4.98	102.7	1.4216
2	730	5.00	9.98	111.2	1.4229
3	742	5.04	15.02	115.2	1.4238
4	745	4.99	20.01	118.0	1.4243
5	750	4.98	24.99	119.2	1.4250
6	755	5.08	30.05	119.7	1.4250
7	760	5.06	35.13	121.2	1.4252
8	764	4.93	40.06	123.0	1.4257
9	771	5.00	45.06	124.5	1.4260
10	781	5.00	50.06	127.2	1.4266
11	789	4.95	55.01	127.7	1.4270
12	800	4.98	59.99	129.5	1.4276
13	806	5.10	65.09	131.2	1.4280
14	811	5.10	70.19	132.7	1.4284
15	819	4.91	75.10	134.2	1.4888
16	826	5.10	80.20	135.5	1.4292
17	832	4.84	85.04	137.2	1.4998
18	841	4.95	89.99	139.0	1.4304
19	866	5.03	95.02	142.2	1.4317
Bottoms	—	4.98	100.00	147.5	1.4341

lower fractions of microcrystalline waxes is obvious. It may be concluded that the hydrocarbon groups present in paraffin and microcrystalline waxes form a continuous series with the normal paraffin hydrocarbons gradually losing their position of dominance as the molecular weight increases. It seems probable that the so-called "microcrystalline properties" of wax will appear gradually whenever the proportion of hydrocarbons other than normal paraffins of suitable molecular weight is increased.

The difference between the characteristics of the fractions of Wax A (Fig. 3) and those of the two conventional waxes (Figs. 4 and 5) is obvious. The higher fractions of Wax A diverge far from the line giving the refractive index-melting-point relationship for normal paraffins. In fact, these data indicate that the higher fractions from this paraffin wax contain considerably higher proportions of hydrocarbons other than normal paraffins than do the first fractions obtained from microcrystalline wax. The converse is true for the conventional waxes.

The high proportion of compounds of other-than-normal paraffin structure in Wax A can be expected to alter its properties considerably. From the probable nature of these "non-normal" hydrocarbons and their apparent relationship to hydrocarbons in microcrystalline wax, it is to be expected that this alteration in properties will be of the same nature and degree as that encountered when microcrystalline wax is blended in small proportions with conventional paraffin waxes. Fig. 6 shows the effect of addition of microcrystalline wax on the tensile strength of two types of paraffin wax, one a Wax-A type and the other a conventional type. The curves are based on data obtained some years ago on other samples of wax which are comparable with those used in the present study.

The analogy between the curve for the Wax-A type and that portion of the curve for the conventional wax to the right of the maximum is apparent. Further confirmation of this point is given by the data reported in Table IV.

The marked improvement in both tensile strength and elongation given by the addition of microcrystalline wax to the two conventional waxes is obvious. It is equally apparent that no such improvement is obtained by similar additions to Wax A. Indeed, particularly at 70 deg. F., microcrystalline wax, here as in the earlier work, appears to have an adverse effect on the mechanical properties of this particular wax.

The results of the tensile-strength measurements on the reblended fractions of Wax A and on the 95% distillation overhead give further confirmation of the effect of the "microcrystalline-type" hydrocarbons. In effect, omission of the residue left after 95% of this product has been distilled involved removal of a portion of the "microcrystalline-type" hydrocarbons, since the refractive index-melting-point relationship indicates the presence of a high proportion of these hydrocarbons in the residue. It is to be noted that the tensile strength is

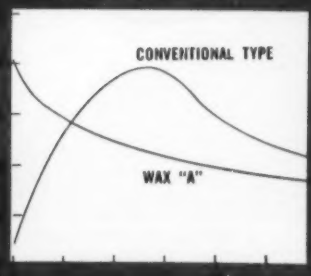
(This article continued on page 169)

TABLE V—TENSILE STRENGTH AND ELONGATION MEASUREMENT

Wax	70 deg. F. Tensile strength, lbs./in.²	70 deg. F. Elongation at break, in.	40 deg. F. Tensile strength, lbs./in.²	40 deg. F. Elongation at break, in.
Wax A	370	0.067	430	0.028
Wax A +3% micro wax	328	0.040	416	0.022
Wax B	225	0.030	231	0.019
Wax B +3% micro wax	390	0.052	393	0.027
Wax C	171	0.018	177	0.017
Wax C +3% micro wax	393	0.053	425	0.026
Wax D	408	0.043	328	0.017

NOTE: The tensile strengths reported in this table were determined with the inclined-plane instrument described in the text. In cases where comparisons are possible, it will be found that they differ somewhat from those of Table I where the tensile strength was measured on larger specimens by the Tinius-Olsen procedure.

FIG. 6-EFFECT OF MICRO WAX ON PARAFFIN WAX



Forecasting shelf life

Prediction by comparison is fairly accurate when supported by accelerated laboratory data.

BY ROSS A. EASTER*

There has been an expression knocking around for many more years than has any concern over packaging and that is: "As unpredictable as the weather." Through improvements in testing and data-gathering techniques, however, that expression, though not yet out of use, is somewhat outdated. The U. S. Weather Bureau can show statistically that it is accurate about 85% of the time on short-range forecasts of weather. This example is cited here to indicate that prediction of the shelf life of products from data that can be gathered in a laboratory is not necessarily a hopeless task.

The writer's experience has been in the food industries and specifically with cereal foods and, therefore, the information that is presented here is applicable primarily to food products. Many of these ideas and test methods can undoubtedly be applied to other packaging fields.

In packaging, shelf life is a term generally used to denote the length of time a packaged product will remain useful and of acceptable quality when it is subjected to the various factors encountered in its usual channels of distribution. The ability to predict or at least to make some reasonable estimate of shelf life of a packaged product is valuable:

1. To make decisions as to marketability of a product,

2. To form a basis for rapid improvement of quality by packaging or reformulation,

3. To set up an organization for distribution and

4. To control inventories of stocks in the field.

If we are to attempt an intelligent prediction of the shelf life of a product, we must first look at the factors which affect the quality of a given product.

Moisture, either by directly causing a physical change in a product or by indirectly promoting chemical or biological changes, is possibly more important than any other single factor. The temperature to which a product is subjected is a factor about which very little can be done in a practicable manner. Elevated temperatures can result in grease soakage, denaturization of proteins, non-enzymatic browning and acceleration of many of the changes caused by moisture. The temperature of storage along with its counterpart, moisture in the vapor phase, is pretty much dependent upon the weather and must be considered accordingly. Oxidation of a component of a product causing rancidity, staleness or biological change is a factor more recently being recognized as a detriment to quality. Contamination by foreign odors and by rodents or insects must also be considered.

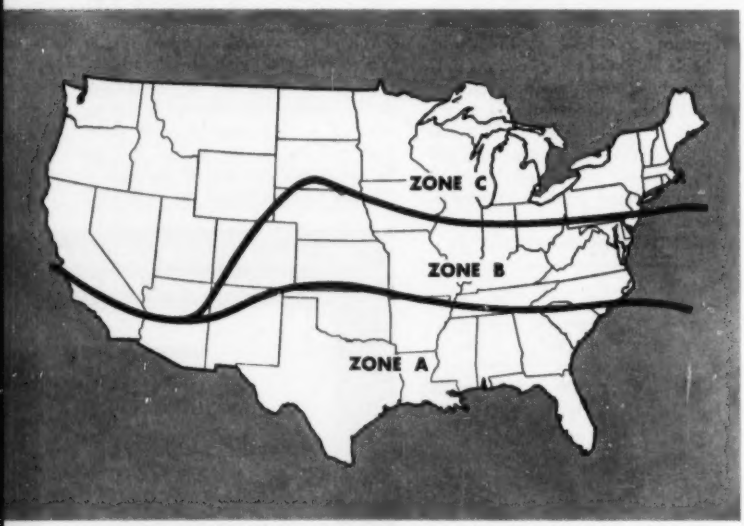
The physical handling to which a packaged product is subjected is a complete study in itself and no further reference will be made to this factor in this discussion.

Aids to estimation

Assuming that we are aware of the factors that can affect the quality of our product, let us then look to the laboratory tests which can aid us in the prediction of shelf life. We should ask ourselves these questions: What are the characteristics of our product? How does this product react under accelerated conditions of storage?

Some of the tests for determining the characteristics of a product in terms that actually can be used are

* Head, Packaging Section, Research & Development Dept., Pillsbury Mills, Inc., Minneapolis. Adapted from a paper, "How to Predict Shelf Life from Packaging Laboratory Data," delivered by the author before the Annual Forum of the Packaging Institute, New York, Oct. 22, 1952.



1. THREE WEATHER BELTS are generally recognized in considering storage problems of packaged products. This is not the Pillsbury Mills map, which the company considers confidential, but a similar one prepared by MODERN PACKAGING on the basis of data appearing in "Climate and Man," published by the United States Department of Agriculture in 1941.

standard procedures. Other tests must be devised as the need arises. Since moisture plays such an important role in the packaging of foods and many other materials, humidity equilibria data can provide information concerning the capacity of a product for moisture at a given relative humidity. This data will also aid in locating the critical moisture content and its corresponding relative humidity. The critical point may be that at which a product begins to cake, become soggy or where chemical and physical changes begin to be greatly accelerated.

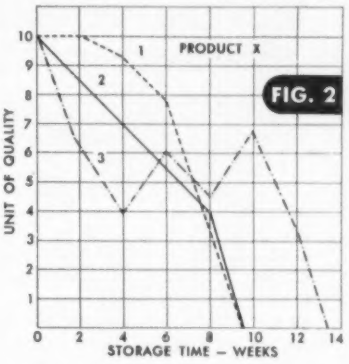
The free-oil content of a product containing fats or oils is important information from the standpoint of grease soakage and consequent deterioration of the oils. Procedures for the determination of free-oil content of products are being investigated; for example, the method published by the M.I.T. Department of Food Technology (1).† Testing procedures exist for the determination of the affect of oxygen on products, especially those products composed partially or wholly of fats and oils. Procedures such as the fat-stability tests (2) utilize time as one of the variables and are, therefore, an index to shelf life. Tests can be employed to determine quantitatively the volatile components of a product as well as a product's capacity for foreign odors.

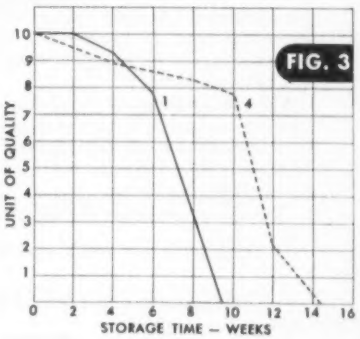
In addition to the tests mentioned and others that may be devised, a look at the formula and manufacturing procedure for a specific product may reveal information valuable to the shelf-life prophet. Information that is known about the keeping quality of individual components of a product may hold the key to the relative stability of the whole product. For example, it can be shown that a mixture of crystalline materials will have an equilibrium relative humidity that is lower than the equilibrium for any of the individual components of that mixture (3). It appears also that the equilibrium relative humidity of mixtures of amorphous materials may be similarly changed. It is, therefore, important to study formulations and small changes made in existing formulas to determine the effect upon shelf life.

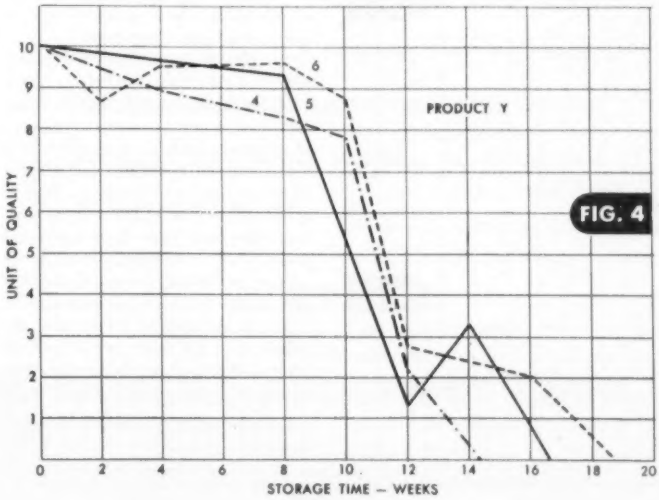
It is important to accumulate records of the average weather conditions for the localities in which the products are to be distributed. These data are especially helpful in making calculations from storage tests and also in correlating studies made in the distribution channels.

Controlled laboratory storage is possibly the most important single type of test that can be used for making shelf-life predictions. The storage of the product in question under conditions accelerated over those that normally exist with respect to temperature, humidity, oxygen, light, odors, etc., can provide information necessary to the prediction of the time-quality relationships. Such accelerated storage tests must be tied in with the usual tests for deterioration and resultant quality of products.

A more accurate picture can be obtained in some cases by utilization of storage conditions having a controlled cycling of temperatures and humidities within a definite range. Such cycling can promote a certain breathing in packages that are not 100% impervious and tend to promote a flow of moisture vapors, oxygen, odors, etc., in and out of the package in much the same manner as occurs in actual field storage. One of the cycling storage conditions used in gathering some of the data presented later on in this discussion was determined from the examination of weather records. The market locality having the highest temperature and humidity was chosen to set up the cycling system. This particular storage space maintains a temperature of 90 deg. F. and 57% relative humidity for a period of 4 hrs., at which time the temperature gradually drops to 76 deg. F. with a corresponding increase in relative humidity to 90%. This latter condition exists for 4 hrs. and then the temperature and humidity are gradually returned to the original conditions. This cycle takes place once every 24 hrs. Another cycling







† Numbers in parentheses identify References appended.

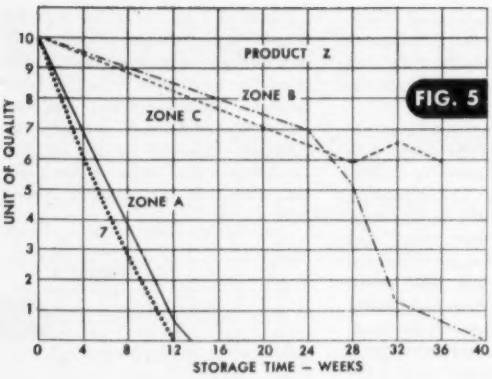


FIG. 5

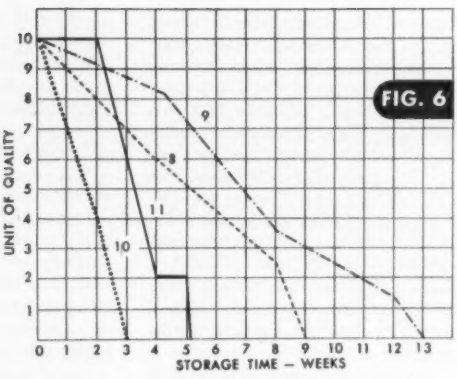


FIG. 6

condition used in gathering some of the data here and which is more accelerated has a high temperature of 100 deg. F. which is cycled to 85 deg. F. and back to 100 deg. F. twice every 24 hrs. The relative humidity during this cycling is maintained at from 85 to 90%. The conditions that are chosen for accelerated laboratory storage are dependent upon the product that is to be studied and the locality in which it is to be marketed.

The characteristics of the package itself are important, but for purposes of this discussion we are assuming that the product already has been packaged for the market.

Attempts at prediction of shelf life can fall into two categories. The first case exists where, in addition to laboratory data, historical data or experience has been accumulated for a packaged product of a similar nature. This particular case may be termed prediction by comparison. The second case constitutes a more difficult problem in that laboratory tests will have to be relied upon entirely since no previous information has been accumulated.

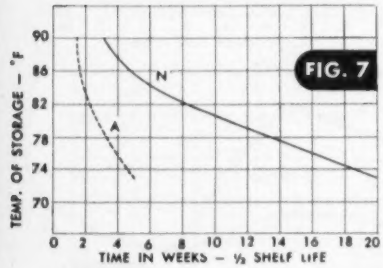


FIG. 7

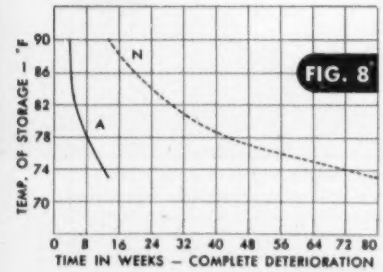


FIG. 8

Prediction from data gathered

Presented here are some experimental data that have been accumulated, not as positive proof but as an indication as to what might be done concerning prediction by comparison. These data have been gathered on several packaged products, the nature of which I am not at liberty to divulge. The data shown here relates to only a very few products for which information has been collected. For the sake of discussion, these products will be assigned a letter designation.

In order to control the shelf-life experiments, we have divided our distribution territory in the United States into three zones according to surveys of weather data. Zone A represents the most severe conditions with respect to temperature and humidity. Zone C is the northern or least severe weather conditions and Zone B is the in-between area.** Although these zones overlap somewhat, we have found this system very helpful to our experiments.

Let us look first at information obtained from the most severe zone, or Zone A. Fig. 2 shows the quality-time relationship of Product X when stored under various conditions. The unit of quality is shown along the ordinate. This quality designation is a combination of several factors used in judging a given product, 10 being a fresh, high-quality product and zero being a product that is unacceptable. The storage time in weeks is shown along the abscissa. Curve 1 represents Product X stored at accelerated laboratory conditions wherein both temperature and humidity are cycled, one complete cycle occurring every 24 hrs. As indicated on the graph, the shelf life of Product X under these conditions was found to be approximately 9½ weeks. Curve 2 represents the storage of the same product under actual field conditions at or near Jacksonville, Fla., during the warm, humid season of the year. The shelf life of this product was nearly identical to that indicated by laboratory tests. Curve 3 is the product quality curve for storage at the warm but somewhat less humid conditions of Dallas, Tex. The shelf life in this case was approximately 13½ weeks. From this information, we would expect a 1:1 ratio between our accelerated cycling conditions and storage at Jacksonville and a 1:1.4 ratio for storage at Dallas.

Keeping these ratios in mind for a moment, let us refer to Fig. 3. Here in the same type of graph are shown two curves of the shelf life of Product X packaged with two different degrees of protection. Curve 1 is the same curve for Product X under accelerated conditions as was shown on the preceding figure. Curve 4 represents the product stored under the same conditions but having an improved shelf life. We shall now designate this as Product Y. From this information and

(This article continued on page 174)

** Ed. Note: The zone map shown herewith as Fig. 1 is not the actual Pillsbury Mills map, which is not available for publication, but one prepared by Modern Packaging showing the three climatic belts roughly as they are usually drawn for packaging studies of this type.

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Depends on

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all the way

From carton sealing to case sealing . . . wherever adhesives are used . . . the C. F. Mueller Company relies on Federal. And no wonder! Federal's Research Laboratories are constantly striving for superior adhesives to do your job better . . . faster . . . at lower cost. This everlasting search for better products, plus our production "know-how" combine to bring you tomorrow's adhesives . . . today.

CARTON GLUE No. 52

Fast setting even on difficult stocks. Runs smoothly, tacks quickly, and has excellent penetrating properties. It is non-throwing, non-stringing, non-warping. Fast tack with long temper makes this Carton Glue ideal for use on Pneumatic "Hi-Speed," Stokes & Smith "Neverstop," and all other automatic and semi-automatic carton sealers.

CASE SEAL No. 15

Brings new speed and efficiency to case sealing. Sets in 15 seconds on all standard type case sealers (also hand sealing). Dries rapidly, is odorless, stainless, and non-toxic. Runs smoothly, and adheres firmly to practically all types of boxes such as corrugated, kraft, jute, etc.

Complete line of
Glues, Pastes, Gums, Resins
Glues to meet all Government Specifications
Write for Complete Information

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210-220 Wythe Avenue • Brooklyn 11, N. Y.
Baltimore • Boston • Cleveland • Philadelphia

AFFILIATES: FEDERAL LATEX CORP. Brooklyn, N. Y. · FEDERAL RESINOUS CHEMICALS CORP. Brooklyn, N. Y. · ADEX MANUFACTURING CO. Baltimore, Md.

Questions & Answers

This consultation service on packaging subjects is at your command. Simply address your questions to Technical Editor, Modern Packaging, 575 Madison Ave., New York 22, N. Y. Your name or other identification will not appear with any published answer.

Sheet-material requirements

QUESTION: We are searching for a stiff sheet material that is (1) *unaffected by atmospheric changes,* (2) *heat sealable to a thermoplastic film such as vinyl to make a strong seal,* (3) *less costly than vinyl or acetate sheeting. We think the answer could lie in a paper product which has had plastic distributed uniformly through it, but we would like your suggestions on a material with these general characteristics that would be satisfactory for our particular purposes and requirements.*

ANSWER: It is doubtful whether a paper or paperboard-and-plastic combination can be found which will give you sufficient dimensional stability if these requirements are extremely severe and if you still want the lowest possible cost. A very large amount of resin and special processing are required to produce a paperboard which does not respond to humidity changes by showing curling or some hygro-expansivity. You could obtain a reasonable degree of dimensional stability, good heat-sealing characteristics and low cost from light-weight paperboard which has been surface coated with any of several different resins applied from solvent solutions, emulsions or by thermal processes. If this class of materials is not satisfactory, you will probably find it necessary to go to plastic sheeting to satisfy all of your requirements.

Paper with good slip qualities

QUESTION: One of our processes uses a paper that must slip very easily at all points. We have tried different coatings on paper as well as different kinds of coated and calendered papers, but we still obtain variable results. The process requires a paper that has good slip characteristics against itself and polished metal even though it may remain in contact for some time under considerable pressures. Can you suggest any method by which we can get the good slip qualities that we require?

ANSWER: Apparently, attempts to solve this problem have been made through the use of surface coatings or calendering to make a mechanically smooth surface. It may be that you should go in the other direction and use papers which are not coated or calendered, but which have harsh, fibrous surfaces. Smooth and polished surfaces when subjected to pressure for short periods of time can become difficult to separate or slide apart because the air is forced out between the surfaces and the coefficient of sliding friction therefore becomes very high.

The best example of this is probably the Johannsen blocks which are used as standards for very accurate mechanical measurements. These highly polished, metal-block surfaces, after they have once been pressed together, require the exertion of considerable force to separate.

If the paper surfaces are hard but slightly roughened then the air is not forced out between them when they are pressed together and the two sheets can be slipped apart without too much difficulty. However, it will be necessary for you to try many different types of papers and degrees of calendering, surface sizing, etc., before you find the proper combination of finish and roughness for your purpose.

WVT of creased samples

QUESTION: We are interested in knowing the meaning of water-vapor-transmission figures when the test is taken on flat as well as creased samples. Our tests show that different materials show different effects from the creasing and we would like to know if there is a better way of making this test than by using the present creasing technique. Can you give us the benefit of your knowledge on this subject?

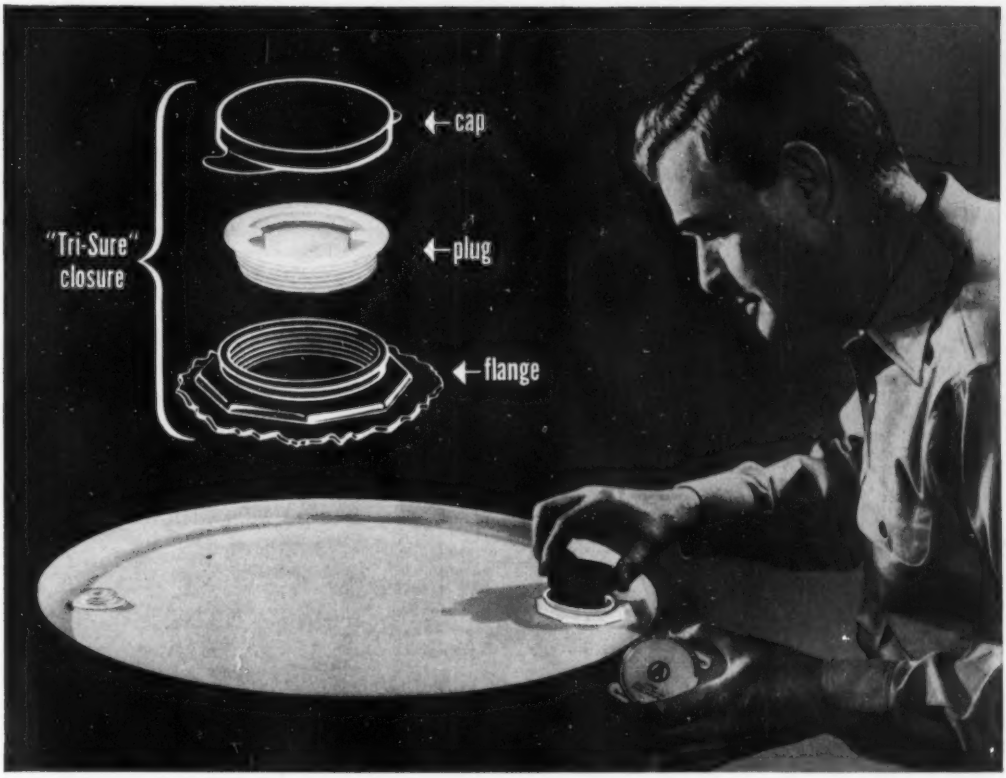
ANSWER: The purpose of the creasing procedure is to give an index of what happens to the moistureproofness of a material when it undergoes handling, fabrication, sealing, folding, etc.

It is obvious that only a single procedure involving creasing operations should not be expected to simulate all the different kinds of handling that a package material undergoes. However, long experience has shown that the creasing procedure does give a good index of the durability of the moistureproofness of a material.

Water-vapor resistance of materials is obtained by many techniques and as a result, each material can be expected to show different amounts of degradation when subject to the creasing procedure. For example, moistureproof cellophane usually shows a very substantial degradation due to the abrasion of the thin layer of surface wax which imparts its moistureproof quality. On the other hand, polyethylene film shows practically no degradation after creasing; its moistureproof quality is inherent in the resin.

Depending upon its composition, each material will show different amounts of degradation after creasing and these results are generally indicative of what will happen in fabrication.

You must keep in mind, however, that this is a test of a material and should be supplemented by tests on the finished package in order to obtain the final determination of moistureproofness.



Drum plugs molded of DU PONT "ALATHON" help eliminate contamination of chemicals

It's another packaging improvement made possible by the outstanding properties of "Alathon"

Corrosive materials packaged in metal drums become contaminated unless walls, flange threads and plugs are coated with a protective material. When the flange and plug are of metal, the flange-thread coating tends to wear away due to repeated removal and insertion of the plug. Exposure to the metal contaminates the material packaged. Frequent recoating of the flange threads is necessary to maintain the protective seal.

One closure manufacturer wanted to make the plug itself out of a material that would be harmless to the thread coating. But it had to resist chemical attack and give a positive seal as well.

He chose Du Pont "Alathon"* polyethylene resin because of its unique combination of properties. "Alathon" is odorless, tasteless, non-toxic (contains no plasticizer). At ordinary temperatures, it has outstanding resistance to most chemicals and solvents in common use. "Alathon" is tough, flexible, and virtually unbreakable. Its resilience assures a tight, leakproof fit without damage to the flange-thread coating. Its low specific gravity and ease of molding permit mass production at low cost.

Du Pont "Alathon" is widely used in the packaging industry for closures, containers and as a coating for paper. Perhaps it can help you improve or develop packaging applications. For full information, write:

E. I. du Pont de Nemours & Co. (Inc.)
Polychemicals Department; District Offices:
350 Fifth Avenue, New York 1, New York
7 S. Dearborn Street, Chicago 3, Illinois
845 E. 60th Street, Los Angeles 1, California

*REG. U.S. PAT. OFF.

"Tri-Sure"† flanges, plugs and seals made by American Flange & Mfg. Co., Inc., New York, N. Y.

† *Trademark—American Flange & Mfg. Co., Inc.*

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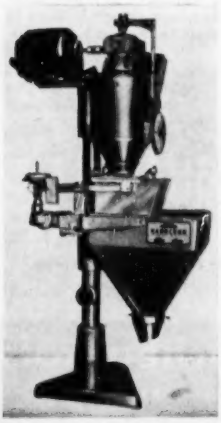
Equipment and materials

EXTRA-TIGHT BACON WRAPPING
is claimed for a new Model F wrapping machine now offered by Package Machinery Co., East Longmeadow, Springfield, Mass. A new technique is used to draw cellophane so tightly over a card of sliced bacon that a minimum of air space is

allowed. This is claimed to result in better keeping quality and improved appearance of the packaged product. Either plain cards or the special folded style of card developed for bacon may be used. The new bottom-sealing unit of the machine seals the entire under fold to the bottom of the package, eliminating loose ends and bottom wrinkles. With a single operator to feed the machine and remove wrapped bacon, speeds up to 40 packages per minute are quoted. Speed is adjustable from 20 to 40 per minute. Package-size adjustment can be made quickly, it is said. Size range is for packages from 5 to 8 in. wide, 9⅝ to 11 in. long and ¼ to 1 in. thick. Special cellophane or other materials designed for use with bacon may be used and the machine is also being adapted for use with Pliofilm, according to the manufacturer.

A SEMI-AUTOMATIC NET WEIGHER
for fast, accurate packaging of coffee, tea, rice, beans and similar products has been introduced by Hanneonn Machine Co., Inc., 180 Lafayette St., New York 13, N. Y. The unit, called the Clipper, will weigh and dump charges from 2 oz. to 1⅛ lb. with an accuracy within 1/32 oz. on units of 4 oz. or less and within 1/16 oz. on larger weights, according to the company. On some materials exact weight on 95% of the charges is claimed. Speeds to 30 charges per minute are reported possible with 2- to 3-oz. Silex coffee sizes and 4-oz. tea packages. Coffee can be filled into 1-lb. packages at speeds to 24 per minute. In operation the weigher, once turned on, maintains an even flow of material into the weighing bucket until exact weight is obtained. Flow then stops, the charge is dumped and weighing recommences automatically. There is no foot switch or other dump control; the machine continues to operate at the speed set by conveniently placed speed-control dial. The Clipper's scale has jeweled agate bearings and hollow-ground hardened steel knife edges. The product-feed mechanism, said to maintain uniform flow even on some materials classed as "not free flowing," is of the same type installed on some of the manufacturer's more expensive weighers. The Clipper is completely self contained, highly simplified and requires no skill to operate, according to the manufacturer. Over-all height is 48 in., the base measures 15 in. square and its weight uncrated is approximately 175 lbs. Standard power is a ½ h.p., 110-V., 60-cycle motor.



STAPLED CORRUGATED CARTON CLOSURES
can be made from the outside of filled cartons without damage to carton contents with the Staplex Actuated Anvil M-2, offered by Staplex, Inc., 308 N. Park Ave., Herrin, Ill. The balanced design featuring twin handles permits accurate staple placement for stapling along carton edges. An optional penetration control to adjust depth of clinch assures closure without damage to carton contents and another optional control provides variable tightness of clinch. The Actuated Anvil machine drives the large industrial staples with 1⅝-in. crown and ⅝-in. legs.

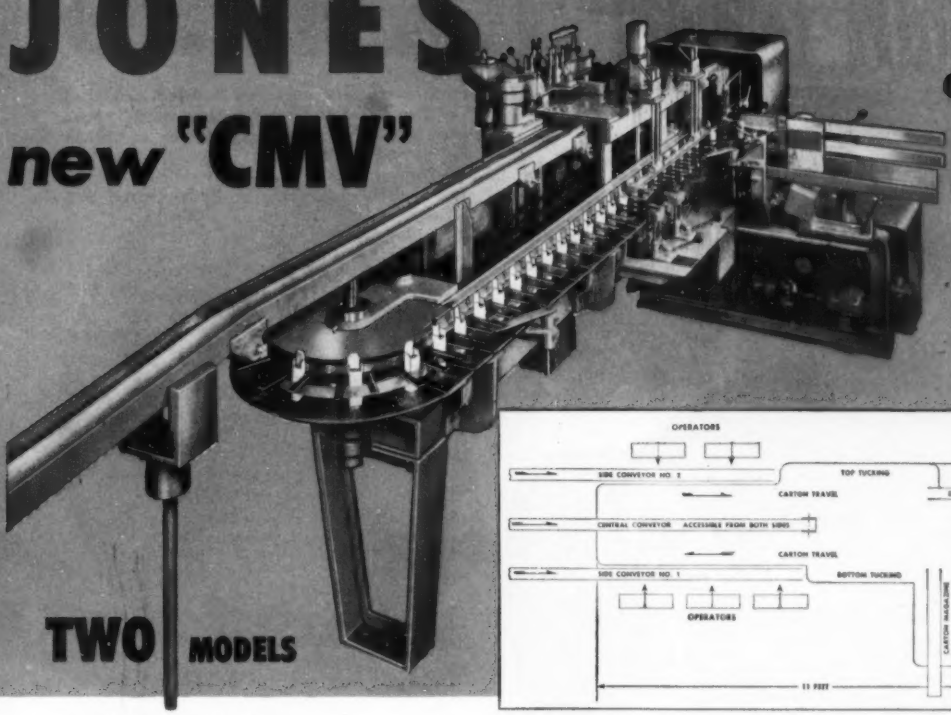
A NEW BULK SAUERKRAUT CAN
designed for use with a replaceable polyethylene liner is offered by Continental Can Co., Inc., 100 E. 42 St., New York, as an economical and more appealing bulk shipping and point-of-sale dispensing container for this product. The 50-lb. round metal cap, intended to replace wooden barrels, has a flaring top and a slip cover. The polyethylene liner folds neatly out over the lip of the can for filling and is then closed and secured with a rubber band before the lid is put on. The company points out that easy reclosure, using the rubber band, will contribute to maintenance of kraut freshness at point of sale, while frequent replacement of the liner prolongs container life inexpensively and indefinitely. The easily handled size of the container will also make delivery and returns simpler for both packer and retailer. The can's smaller size and attractive appearance is also expected to encourage prominent retail display. The new sauerkraut can is made in Continental's East St. Louis plant and the company reports that suitable polyethylene liners are widely available.

AUTOMATIC SCREW-CAPPING MACHINES
manufactured by Tite-Cap Machine Co., Inc., 56 Rose St., New York 38, N. Y., have been improved by redesign of the cap-feeding hopper and the chuck. The company says the machine will now handle all caps without need for adjustments. The new bottom-discharge hopper provides gentle rotating motion

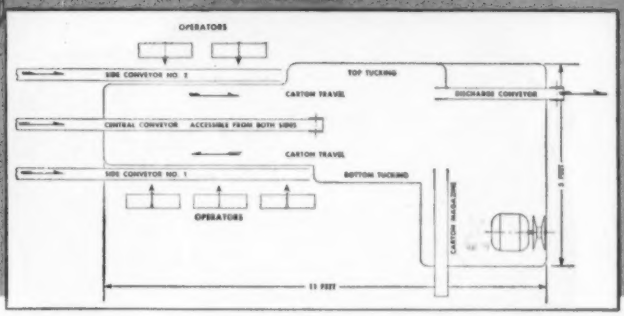
JONES

new "CMV"

CONSTANT MOTION VERTICAL



TWO MODELS



full range of sizes

The CMV takes the flat carton (reverse or airplane tuck) from magazine, opens the carton, tucks bottom flaps, conveys the open carton past manual loading stations, tucks top flaps and delivers the loaded carton. The new CMV is fully adjustable within the following ranges:

MODEL 4 — ½ x ¾ x 2¼ inches up to 3¼ x 3¼ x 8 inches

MODEL 5 — ⅞ x 1 x 2 13/16 inches up to 4 x 4 x 9 inches

Change over to different sizes is made in mere minutes — without special tools or skills.

IN THE THREE YEARS SINCE IT WAS INTRODUCED, the CMV has established an enviable record of versatility, efficiency and reliability. Retaining all the features which have made it the choice of scores of users, the *new* CMV offers these additional important advantages:

More operator space

By utilizing both sides of the machine, 5 operators may be used for higher speeds with multi-piece loads.

Less floor space

Measuring only 11 x 5 feet, the new CMV may be mounted on casters for ready portability from one line to another.

Flexible, straight-line infeed and discharge

Independently driven conveyors are available for infeed thru center, or along one or both sides of machine. Discharge conveyor can be lengthened to serve as packing belt.

R. A. JONES & COMPANY, INC.

Cartoning Machines Specialists

JONES cartoning engineers are always available to help work out the FASTEST, most ECONOMICAL, most DEPENDABLE cartoning production line for YOU.

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THE LAST WORD IN STRIP FEED PRESSES

STURDY CONSTRUCTION

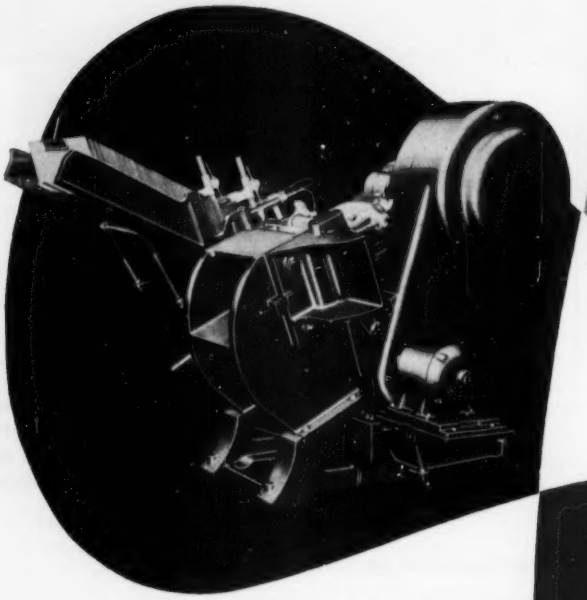
Welded steel frame . . . far stronger than casting . . . maintains perfect alignment without tie bars . . . no sliding members in brake or friction clutch.

HIGH SPEED PRODUCTION

Up to 300 strokes per minute with multiple dies . . . at least one hour production run without reloading magazine.

LOW MAINTENANCE

Automatic compensation for wear or friction . . . longer die life . . . no scratching . . . full length slide lubrication . . . automatic lubrication.



The HAMILTON STRIP FEED PRESS

See this fast, rugged press in action at the Canner's Show Booth 50 Conrad Hilton Hotel February 21-25

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to prevent caps from sticking or locking together. There is a windowed side-opening door that simplifies emptying the hopper after a run. The capper's chuck has been redesigned for use with special chuck liners that fit various sizes of caps from the small plastic ones to the large metal variety used on pickle jars, thereby avoiding any necessity to purchase complete new chucks when new cap sizes are used. The Tite-Cap machine is a single-head unit with a speed up to 60 containers per min.

LABELS FOR HAZARDOUS-PRODUCT CONTAINERS designed to comply with state laws governing labeling of such containers in plants and shops have been announced by the W. H. Brady Co., 727 W. Glendale Ave., Milwaukee, Wis. The strong cotton cloth labels are adhesive backed and are said to stick fast to glass, metal, plastics or ceramic. A silicone plastic surface coating makes them resistant to oil, grease, abrasion and most of the materials likely to be packaged in such containers. Three of the 2¼-by-3-in. labels are mounted on a convenient dispenser card cut near one edge to provide a handy starting strip that simplifies peeling. Label copy is printed in black on a caution yellow background. Labels for materials such as gasoline and alcohol are completely worded; those for most other dangerous materials commonly found in industry are made up for the user from stock labels, available in 36 different wordings, with inserts bearing the name of the chemical. Special markers in any size, color or wording are also available to order.

A SHORT AUTOMATIC CASE SEALER requiring about half the floor space taken by conventional sealers is now being offered by Elliott Mfg. Co., 1735 Ventura Ave., Fresno 1, Calif. The basic model of the Elliott Sealmaster line

is only 14 ft. long; this unit will glue and seal 250 to 300 standard size cases per hour. Eight models in the line provide a range of speeds up to 1,000 or more cases per hour by providing

TUCK-O-MAT

tuck end carton set-up machine

Model 50 TUCK-O-MAT occupies only 24" x 42" floor space. Portable on rubber wheels.

- Reduces labor costs as much as 85%
- Fast change-over time
- Requires part-time attendant only
- 4000 cartons per hour output
- Inexpensive change parts
- Runs wider range of carton sizes
- Low initial cost

Standard TUCK-O-MATS are running hundreds of different size cartons. For greater packaging security the TUCK-O-MAT, with special attachments, will set-up 4-flap interlocking bottom cartons.

The Model 54 CONVEY-O-MAT delivers cartons in an upright position ready to receive your product.

SEND US YOUR CARTONS AND OUR ENGINEERS WILL GLADLY MAKE RECOMMENDATIONS

Machinery Mfg. co. inc.

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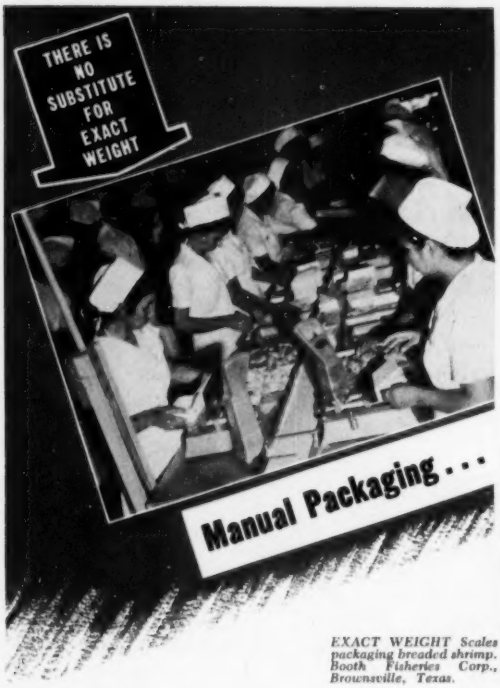


EXACT WEIGHT Scales packaging breaded shrimp. Booth Fisheries Corp., Brownsville, Texas.

Sales & Service from Coast to Coast

While mechanization with fully automatic equipment is the always desired packaging operation there are many products which cannot be so handled and this includes a wide range of consumer packaged products. This is due to diversity of products, volume involved and orders to be filled. If you have products of this nature accept these facts. Solve your problem with skillful time and motion study of trained personnel and special production line equipment to fit the job. From the equipment standpoint your efficiency can be materially increased with EXACT WEIGHT Scales for checking manually packaged containers. Today thousands of these famous scales are at work in this type of packaging. They are your best cost control measure in many types consumer packaging operations. Write for unit scale details to fit your manual packaging.

EXACT WEIGHT SCALES

BETTER QUALITY CONTROL
BETTER COST CONTROL

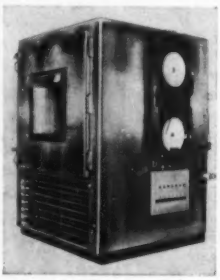
THE EXACT WEIGHT SCALE COMPANY
914 W. Fifth Ave., Columbus 8, Ohio
2920 Bloor St., West, Toronto 18, Canada

Equipment and materials

increased length of the compression section. All models seal top and bottom or top only, as desired, and all will accommodate cases in the standard sizes used in the food-processing, canning, brewing and distilling industries. In addition to its compact size, features of the Elliott Sealmaster machines include electric glue heaters which can be used to speed glue-drying time of sealed cases. Ordinary standard commercial glue is used, applied to inner or end flaps as desired. A single adhesive roller for top flaps and a single roller for the bottom results in a 50% saving in clean-up and maintenance time, according to the company. The gluing and compression sections are built as single units, simplifying adjustment for case size. Construction is reportedly simple, employing welded die-formed steel members. Installation requires only connection of power supply for the single motor. There are no limit switches; instead, a new type of safety clutch automatically stops operation if an irregular or improperly packed case jams in the gluing section. An easily-operated hand wheel at the side is then turned to reverse the declutched mechanism to remove the faulty case.

TEMPERATURE-HUMIDITY TEST CHAMBERS

in five basic types are now being produced as a standard line by Tenney Engineering, Inc., 26 Ave. B, Newark 5, N. J. By standardizing on five sizes, the company is said to be able to provide a unit to meet the user's requirements without the extra cost of custom-built chambers. Chambers have inside dimensions ranging from 22 by 19 by 48 in. up to 48 by 24 by 48 in. The chambers automatically maintain humidity from 20 to 95% through a temperature range of 35 to 185 deg. F. Minimum dew point is 33 deg. F. All models have accurately calibrated indicating thermostatic controllers, air-circulating blowers and stainless steel interior and exterior paneling. Four types of control incorporated in the Tenney TH series of chambers permit any desired combination of fixed or varying temperature and humidity, and thus can be used to stimulate constant or varying climatic or atmospheric conditions for testing the performance of protective packaging, moisture pick-up of packaging materials, resistance of fungi and mold, etc.

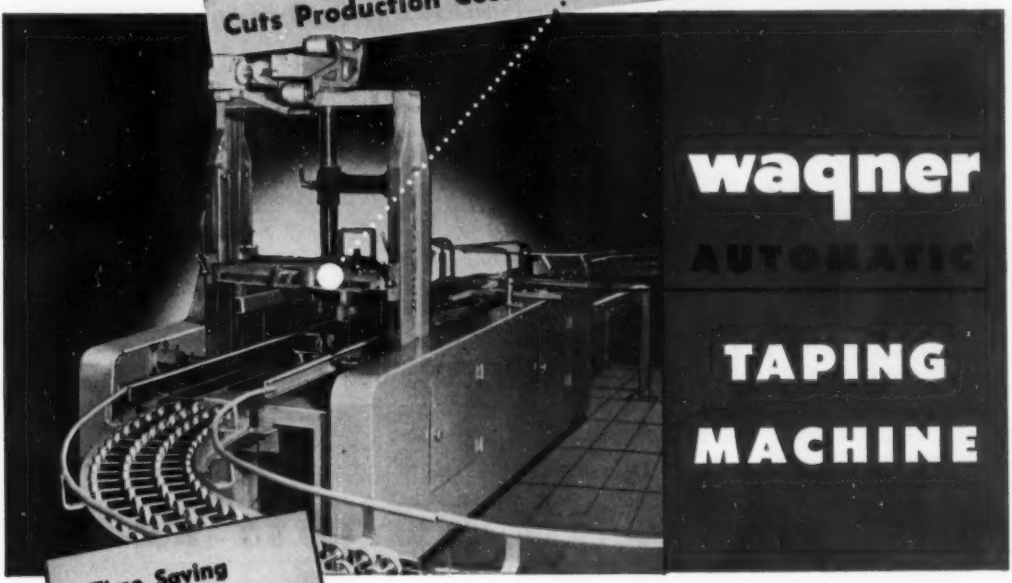


A VISUAL PACKAGE-HUMIDITY SIGNAL

designed for use in the dehydrated packaging of military and other materials subject to moisture damage has been announced by the Davidson Chemical Corp., Baltimore 3, Md. The indicator, known as a "bull's-eye," is a glass globe filled with the company's "Tel-Tale" indicating silica gel which changes color from deep blue to light pink as it picks up moisture. The glass globe, open on the reverse side to admit air from within the container, fits into a threaded nipple which is welded directly to the metal shell of the storage container. A metal locking ring

THE ONLY CARTON CLOSING MACHINE OF ITS KIND IN THE WORLD!

Cuts Production Costs — **Permits Carton Re-Use**



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- **Saves Labor.** Operates automatically without special supervision.
- **Saves Space.** Compact — requires minimum of floor space.
- **Saves Time.** Adjustable to variable speeds to fit your packing line.
- **Saves Accidents and Down Time.** Moving parts fully guarded, yet easy to reach for maintenance.

Now you can automatically tape cartons neater, faster and at far less cost. For the compact, efficient Wagner Automatic Taping Machine can be tuned to your production line to tape up to 50 cartons a minute. Through Automatic Taping — you eliminate supervision, and slash carton-sealing labor costs. Your taping job is done simply and quickly . . . neatly. A neater package means greater carton acceptance, thus increasing carton return trips and drastically cutting single trip carton costs. It's these extra savings that add up to sound plant economy. Investigate the new Wagner method of carton sealing. Write Wagner today!

WAGNER Automatic Taping Machine is used by leading breweries everywhere

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Name .....
Company .....
Address .....
City ..... State .....

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I always Check P. L. ANDREWS First!

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packaging
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- cellophane
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- string & button
- phono record sleeves
- phono record mailers
- sift proof
- special sizes & shapes
- window
- filing jackets
- gusset type
- compartment
- Armor-Edge*

The packager who asks P. L. Andrews first, rarely has to check a second supplier. P. L. Andrews makes just about every type of specialty envelope under the sun.

Users know that P. L. Andrews manufactures envelopes ranging from tiny half-inch square midgets for jewelry parts to giant jackets for metal stampings, printing mats, advertising displays and the like.

P. L. Andrews envelopes are versatile and, generally speaking, less expensive than other package forms. Ask us to show you how a custom designed envelope can do an unusually fine packaging job for your product.

* *Patent Pending*

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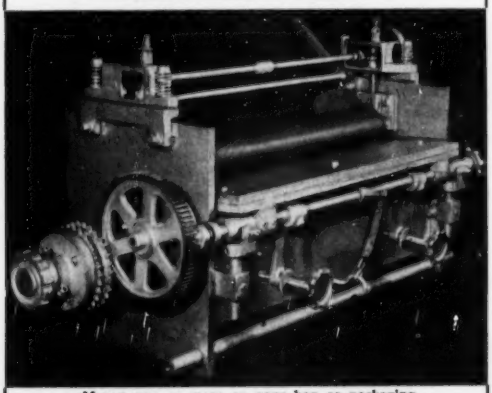
1328 Broadway — New York 1, N. Y.

THE HOUSE OF ENVELOPE SPECIALTIES

Inexpensive . . . **INDIVIDUAL MINIATURE ROTOGRAVURE PRINTING UNITS**



Mount one or more on your bag or packaging machine. Print as you package!
For 10", 15" and 20" web widths. The "Finest Printing in the World" on your packages.
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Handles 101 Small Products

ONLY $60.00
Slightly higher with extra large bag chute.

The Anderson Bagger, Model 134, is a simple, low cost machine that is doing an outstanding job for thousands of users in many industries. Operator can fill a bag and place it in a carton in one operation.

Stainless steel bag chute, capacity 200 bags, adjustable to bag sizes. Blower, equipped with air filter, opens bag and keeps it free from foreign matter.

Easy to operate at high speed with a minimum of effort. Here is a machine that pays for itself quickly. Write today and tell us your product.

Send Today for Bulletin No. 12-29

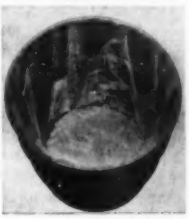
Anderson BROS MFG CO

ANDERSON BROS. MFG. CO., ROCKFORD, ILL.

holds the glass globe in place and when screwed down tightly over the indicator's gasket, forms a seal against moisture penetration of the container. These new bulls-eye visual humidity indicators are currently in use on large containers, the company reports, including those used to package certain missiles. The company, however, suggests the possibility of their use with small packages such as individual spark-plug containers.

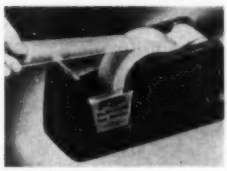
NEW POLYETHYLENE DRUM LINERS

said to be easier to use are being produced by Mehl Mfg. Co., Div. of the Sidney-Thomas Corp., Cincinnati. A fibre disk between two layers of polyethylene gives the new liners a circular bottom. This construction is said to eliminate the need for mandrels necessary with flat liners and creasing which can result in leaks or rupture is avoided. Mehl offers the new polyethylene liners for use with both steel and fibre drums with capacity up to 55 gal. Available gauges run from 0.0015, intended primarily for use with smaller drums and the less-corrosive products to 0.006 for use with highly corrosive products. Mehl suggests the liners for use with food products, corrosive materials, chemicals and for many other hard-to-handle solid, liquid and semi-liquid materials.



A NEW DISPENSER FOR DOUBLE-COATED TAPE

is reported by Minnesota Mining & Mfg. Co., St. Paul, Minn., manufacturer of the unit, to simplify use of this type of tape. The device has a second roller which automatically strips off the tape's protective liner as it is pulled from the roll. The company expects the unit to be helpful in industry and business where double-coated tape does a variety of attaching, mounting, splicing and holding jobs. Either No. 666 transparent cellophane or No. 400 paper-backed double-coated "Scotch" brand tapes fit the dispenser, designated as the Model M-71. The gray-finished dispenser weighs 9¾ lb., stands 5 in. high and measures 9 by 4 in. on the base. It accommodates a 36-yd. roll of double-coated tape in widths from ¼ to 2 in. The dispenser's dual drum arrangement can also be used to dispense two types of tape separately, the company points out.



A MOTOR-DRIVEN HAND BAND SEALER

which applies band-sealing principles in a miniature portable machine has been developed by Doughboy Industries, Inc., Mechanical Div., New Richmond, Wis. As in the company's larger band sealers, continuous-moving metal bands running over sheaves guide the material to be sealed between heating and cooling bars under pressure and at a speed fixed to provide suitable dwell. Doughboy's miniature unit, weighing only 7½ lbs., is offered for closing plastic bags and for fabricating bags of various dimensions from pre-cut tubing in limited production. The company suggests it as a stand-by unit or portable device easily moved anywhere in the plant. It comes complete with a bracket for bench mounting. The sealer measures 11 in. long. The frame is of cast aluminum. Bands are of ⅝-in.-wide stainless steel. Heating bars have 75-watt cartridge-type elements and thermostatic control. Speed is set at 200 in. per

Your packages will look better and *sell longer* when you brand them with NU-HUE, because these new Swift color foils are prepared for your specific application . . . to assure clean cutting, good adhesion, and rich color values on almost any material.

To help you determine the pigmentation and stamping technique best suited to your application, Swift offers *free* color service, thanks to extensive laboratory facilities devoted exclusively to product testing and research. Send us your samples: we will prescribe *without obligation* a foil that will meet your requirements exactly. Your customers know you by your trade mark . . . brand it with NU-HUE, the color that sells.

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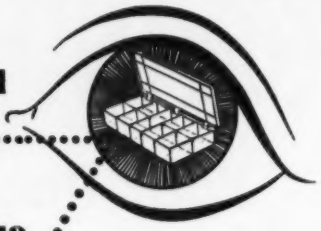
eye-appeal

buy-appeal?



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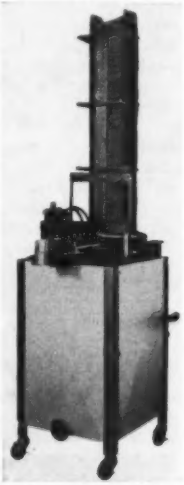
Equipment and materials

minute. Power for heaters and motor totals 300 watts and the unit will operate on either 115 volts D.C. or single-phase A.C. 110 or 220 volts, 25, 50 or 60 cycles. Price FOB factory is $225 with stand.

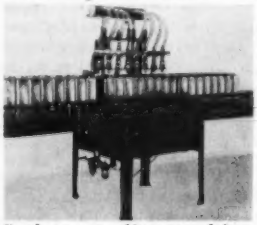
A NEW CARRIER-CARTON OPENER,

said to be the first offered to the bottling industry, has been introduced by the Atlanta Paper Co., Atlanta, Ga. The machine, called the Bottle Master Carton Opener, will open six-bottle beer or soft-drink cartons at speeds up to 70-per-min. Rubber suction cups are used to open the collapsed carton while the carton bottom is locked at the same time. Although suited for continuous operation on the beverage bottling line, the unit is completely self contained so that it can be operated by varying speeds or intermittently as required. The mounting is caster equipped for easy transfer to any desired location within the plant. The manufacturer reports that the machine will save labor and eliminate carton waste caused by careless manual opening. When used to reopen used returned cartons which have been sorted and knocked down, the machine saves time which the company suggests may be employed to improve inspection for broken glass, cleanliness, etc. Deliveries of this unit, first introduced at the International Beverage Exposition in Atlantic City last November, will begin in April, the company advises.



AN AUTOMATIC STRAIGHT-LINE FILLER

equipped with pneumatically controlled safety devices to prevent damage to containers or valves has been added to the complete line of filling, sealing and packing machines of the Perl Machine Mfg. Co., 68 Jay St., Brooklyn 1, N. Y. The new filler requires no operator supervision. Built in three sizes, the machine accommodates without change of parts either metal, glass or plastic containers from ½-oz. to 5-gal. capacity. Viscous and foamy liquids can be filled accurately and at high speed, by either gravity, pressure or vacuum, according to the manufacturer.



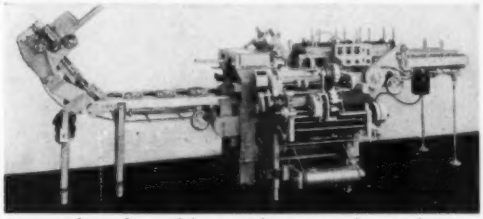
A NEW HAND DISPENSER FOR GLUE

for use on corrugated-box closures, for making waterproof case liners or for applying pressure-stick adhesives is available from Fibleco Illinois Corp., 311 N. Desplains St., Chicago 6, Ill. The all-metal unit weighs 1 lb., 6 oz., and carries approximately ⅛ gal. of light or heavy waterproof glue in its 10-in. handle. Yield is approximately 1,000 ft. of ¾-in. glue line. Feed is by gravity. The free-turning corrugated metal glue roller is mounted with a special lubricating feature which is said to

eliminate sticking, even after a long period of non-use. The dispenser lists for $49 without stand or $52 complete with stand.

HIGH-SPEED WRAPPING OF BAKED GOODS

including such items as angel food, sponge and iced layer cakes is possible on the new Model 47-B wrapping machine announced by the Battle Creek Wrapping Machine Co., Battle Creek, Mich. The unit handles both rectangular and round



items, and may be used for specialty items such as iced cinammon rolls, hot-dog rolls, etc. Speeds are in the 50- to 70-per-min. range and adjustment for a size change is said to take only 5 to 8 min. Products are handled in a continuous flow so as not to disturb layers or mar icing on cakes.

Model 47-B supplements the company's Model 43 designed for wrapping smaller items. The new unit wraps rectangular or round baked items as long as 13 in. up to 8 in. in width and from ⅜ to 4¾ in. in height.

AN IMPROVED CELLOPHANE TAPE

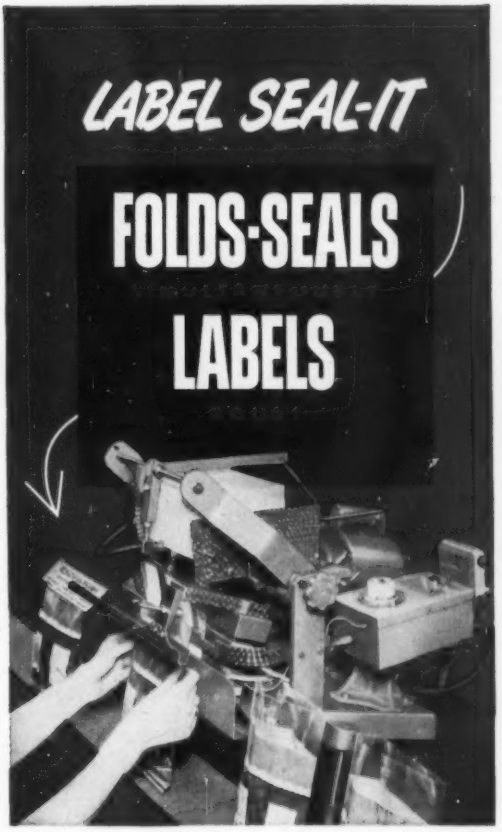
announced by Minnesota Mining & Mfg. Co., St. Paul, Minn., is said to have a more stable backing, a more "aggressive" adhesive and a special patented surface treatment. The new surface treatment provides easy unwind, assurance against breakage and eliminates adhesive transfer. The improved adhesive is expected to make "Scotch" brand tape an improved sealing medium for bags, packages, tubes and cartons as well as for splicing papers, films, foils and cloth, according to the manufacturer. Aging qualities and transparency are described as excellent. The new tape, available through wholesalers in ½- to 6-in. widths on 2,592-in. rolls, with other widths available on special order, is wound on a special air-cushioned core to reduce telescoping.

A SPECIALLY FORMULATED ADHESIVE

has been developed by National Adhesives, Div. National Starch Products, Inc., 270 Madison Ave., New York 16, N. Y., for use with the new corner lap gluer made by General Corrugated Machine Co., Palisades Park, N. J. The General machine, designed for rapid gluing of a manufacturer's joint in forming a corrugated carton or case, applies glue by jet action directly from an airtight reservoir and therefore requires a fast-setting glue. The synthetic-based National Adhesives product for this service is called Resyn 15R3001. It is said to be tacky, non-settling and to have a 10-sec. setting time. The bond is said to withstand water immersion when dry. A speed of 90 bd. ft. per min. is reported, using the glue with a semi-automatic feed machine with a short compression unit.

THE SEMI-AUTOMATIC VACUUM FILLER

manufactured by the Scientific Filter Co., 576 Rose St., New York 38, N. Y., has been redesigned for increased versatility. The unit will now handle glass containers ranging in size from about 1 oz. to 1 gal., and metal cans up to one quart. The filler is an eight-valve, straight-line vacuum unit with an individual liquid-feed suction tube for each spout. Spouts are available for various types of containers and a lateral adjustment is provided for centering containers of various sizes.



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NEWLY IMPROVED—*now equipped with latest type vacuum pickup which insures individual label feeding!* Built-in cam driven pump—no extra vacuum equipment to buy.

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Full line of Heat Seal-It machines available.
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Plants and people

Shellmar Products Corp., a leading fabricator and converter of flexible packaging materials, is observing its 30th anniversary this year. Founded in Milwaukee, Feb. 17, 1923, by **Bert W. Martin,** now president of the corporation, Shellmar has been responsible for many improved techniques in the printing of cellophane and plastic films, which have made transparent, flexible packaging what it is today. In 1951 Shellmar's net sales of printed and converted products totalled $43,067,017—more than 80 times total sales in 1925.

B. W. Martin

The company was founded by Mr. Martin to take advantage of the opportunity presented by the invention of a new kind of printing press capable of printing candy-bar wrappers in as many as five colors at very high speeds.

Foreseeing the potential of the then-revolutionary material, cellophane, when it was first introduced in the packaging industry, Shellmar had by 1928 worked out the necessary techniques for printing on the new film.

The company also was among the first in the field to satisfy the demand for bags and films fabricated from transparent film. It pioneered in letterpress printing on continuous rolls, making possible the use of printed cellophane in prefabricated bags. Printed rolls were also of outstanding importance because they could be used on roll-fed automatic machines for wrapping mass-produced consumer goods.

In 1932 Shellmar bought the existing patents and equipment for a rotogravure process of printing on cellophane. This process, using quick-drying lacquer-based inks, was shared with others through a system of low-cost licensing agreements.

Shellmar has played a leading part in advancing the use of aniline printing and in introducing combinations of films, foils, fabrics and papers in a series of laminations.

During World War II, 81% of Shellmar's sales were military. In postwar years civilian markets were rebuilt rapidly and expanded. Today food packaging alone accounts for 70% of the company's output.

Shortly after the war's end, Shellmar Products Co. and Self-Locking Carton Co. (well-known manufacturers of egg cartons) were merged to form the present corporation. **Peter Berkey,** former president of Self-Locking Carton Co., became chairman of Shellmar's board of directors.

The Cochran Foil Co., Louisville, Ky., has purchased the **Keller-Dorian Corp.,** Fair Lawn, N. J. Acquisition of Keller-Dorian adds a modern foil-converting and processing plant to expanding Cochran operations in the eastern market. The combined converting facilities of Keller-Dorian and **Midwest Foil Co.,** Louisville, also a division of Cochran, will permit diversification of products and better service to customers throughout the United States.

Union Bag & Paper Corp., New York, has elected **G. W. E. Nicholson** as executive

G. W. E. Nicholson (left) and S. K. Bradley

vice president in charge of manufacturing. Other newly elected company officers are: **S. K. Bradley,** vice president in charge of multiwall bag sales; **R. C. Chandler,** vice president in charge of

R. C. Chandler (left) and F. H. Meendsen

board and corrugated container sales: **F. H. Meendsen,** vice president in charge of sales promotion.

Three group leaders have been appointed to the Research & Development Dept., Olin Cellophane Div. of **Ecusta Paper Corp.,** subsidiary of **Olin Industries, Inc.,** East Alton, Ill. The appointees and their assignments are **Dr. Preston M. Kampmeyer,** cellophane research; **Dr. Walter S. Kaghan,** process development; **Dr. George R. Mitchell,** coating research.

Ball Bros. Co., Inc., Muncie, Ind., has appointed **John W. Fisher** as director of sales for the company's Commercial Glass Container Div.

American Machine & Foundry Co., New York, has appointed **Clayton DuBosque** engineering assistant to the vice president and group executive of the company's General Products Group. Mr. DuBosque will coordinate the engineering activities of AMF subsidiaries in the General Products Group with the company's central engineering division. **John MacKinnon** has succeeded Mr. DuBosque as commercial research and development department manager.

Arkell & Smiths, Canajoharie, N. Y., paper-bag manufacturer, has appointed **W. M. Sloane** as sales manager of the newly created midwestern Sales Div. Mr. Sloane will headquarter at 205 W. Wacker Dr., Chicago, Ill. **John K. McIntyre** has been appointed as sales representative in the Western Div. Mr. McIntyre will headquarter at Kansas City.

Better Packages, Inc., Shelton, Conn., has announced a product arrangement with the **Industrial Tape Corp.,** New Brunswick, N. J., whereby ITC is granted national marketing privileges on the Better Packages' pressure-sensitive tape dispenser line. Industrial Tape is permitted to sell under the Better Packages' trade names of "Little Inch," "Big Inch" or "Tackon," or under their own trade names of "Texcel" or "Permacel."

Adex Mfg. Co., Baltimore, Md., paste and gum manufacturer, has announced the removal of its plant to new quarters at 140 N. Kresson St., Baltimore, Md.

After 44 years of service with **Bemis Bro. Bag Co.,** St. Louis, Mo., **E. H. Howell** has retired as manager of the Bemis plant at St. Louis. Mr. Howell will be succeeded by **P. S. McGrath,** formerly assistant manager of the plant. **A. J. Grunzinger** replaces Mr. McGrath.

The Chase Bag Co., Chicago, has appointed **Charles T. Crandell** as sales manager of the Saxolin Open Mesh Dept. Mr. Crandell succeeds **Ben Deutsch** who recently retired as sales manager of the Open Mesh Dept.

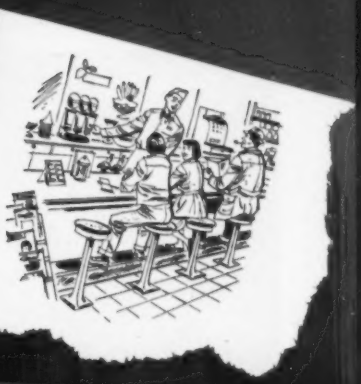
Arthur J. Katz, vice president and director of sales of **Gibralter Corrugated Paper Co., Inc.,** North Bergen, N. J., has been elected president, succeeding **Samuel Katz,** who has been elected chairman of the board.

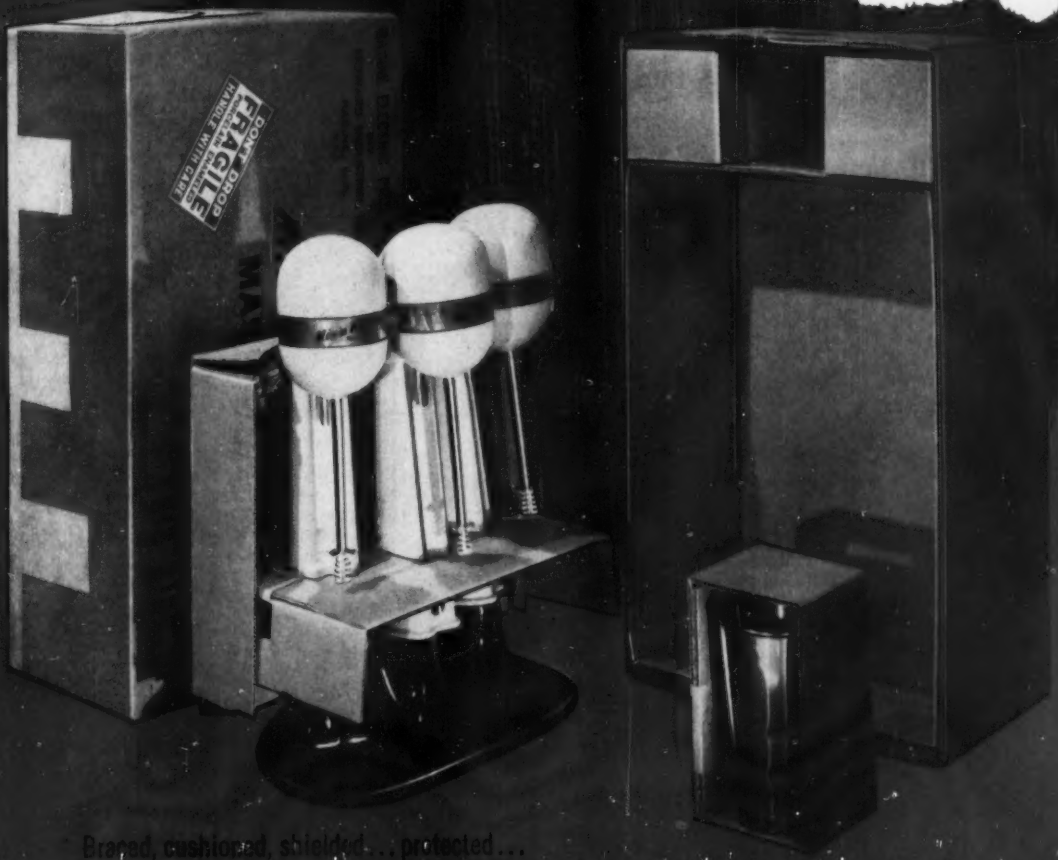
A. J. Katz

National Starch Products, Inc., New York, has opened a new research laboratory in Plainfield, N. J., dedicated to the memory of **Alexander Alexander,** founder of the company.

Continental Can Co., Inc., New York, has appointed **M. D. Sandine** as plant

An H&D idea for you





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packaging convenience *WITHOUT*

INCREASING PACKAGING COSTS

A packaging authority recently reported: *"Efficient closures* as well as sturdy cartons are a must for most products". He adds, "It isn't enough to get products to the home in good shape, but they also must be kept there *fresh and clean"*.

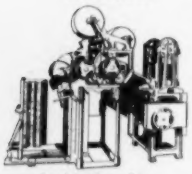
If you have this problem . . . how do you solve it? Here's a suggestion.

The Peters Way does it

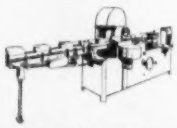
With the Peters Way of Packaging . . . using Peters style cartons and Peters packaging machinery . . . you *absolutely* get packages that are easy to open and close . . . and that *stay* closed on the shelf. Lining paper assures sanitation and freshness . . . at negligible cost.

For many products, only the Peters Way offers you these important advantages. Send us your package and let us tell you, without obligation, if your product is included.

Typical Peters Machines



Senior Forming & Lining Machine



Model CCY Folding & Closing Machine

Junior Folding & Closing Machine

Write for information folder, "How To Make Cartons Easier to Open and Close."

Peters

Machinery Co.

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Plants and people

manager of the company's two can plants in St. Louis, Mo. Mr. Sandine was formerly general manager of the company's defense plant at Coffeyville, Kan. **C. F. Marquard** has been appointed plant manager of Continental's Milwaukee metal container plant.

Raymond G. Fisher is Continental's new director of economic research.

The **National Production Authority** has promoted **John C. Clay** as deputy assistant administrator for The Chemical, Rubber and Forest Products Bureau. Mr.

C. A. Lewis (left) and J. G. Clay

Clay was formerly director of the Containers and Packaging Div. Mr. Clay, who is on leave from **National Starch Products, Inc.**, is shown swearing in Charles A. Lewis as director of the Containers and Packaging Div.

Victor A. Denslow has been appointed manager of wax sales for **Cities Service Oil Co.**, (Del.), with headquarters at 20 N. Wacker Dr., Chicago, Ill. **E. W. Sanders** succeeds Mr. Denslow as supervisor of the wax laboratory.

Curley Co., Inc., Philadelphia, Pa., has initiated an expansion program with emphasis on contract manufacturing and packaging of products in the drug, toiletry, chemical, oil and paint fields with the appointment of **Harold S. Riker** as general manager of the contract packaging and manufacturing division.

Derby Sealers, Inc., Derby, Conn., tape-machine manufacturer, has opened a Boston office at 313 Huntington Ave. The new facilities, operating under the name of Derby Sealer Sales & Service Co., will be headquarters for Massachusetts, Rhode Island and northern New England.

Einson-Freeman Co., Long Island City, N. Y., lithographers and display manufacturers, have given their Chicago office

the status of a self-sustaining branch. Creative art service will be directed by **LeRoy Hopkins** and Chicago sales will be handled by **Gerald Frank. Sam Gold** will continue to divide his operations between Chicago and Long Island City.

The Mullery Paper Box Co., St. Paul, Minn., and **The Mueller Can & Tube Co.**, also of St. Paul, have announced their consolidation under the new corporate name of **Mullery Paper Packages, Inc.** There will be no change in ownership or management.

Food Machinery & Chemical Corp., San Jose, Calif., has elected **James M. Hait** to the board of directors and executive committee. Mr. Hait is in charge of Food Machinery's Central Engineering Dept., which coordinates the engineering activities of FMC's machinery and equipment manufacturing divisions, develops procedural and materiel specifications standards and conducts various programs for the design and development of new machines and equipment. **Donald U. Kudlich** has been appointed manufacturing coordinator for the company's machinery

J. M. Hait (left) and D. U. Kudlich

divisions. Mr. Kudlich will work directly with those FMC divisions and subsidiary operations which produce machinery and equipment for industry and agriculture.

The Canning Machinery Div. of FMC, Hoopeston, Ill., has announced two sales-territory changes. **Dale Davis** has been appointed sales representative for the Ohio Valley Territory which includes Ohio, Indiana and Kentucky. **Sanford E. Larum, Jr.** has been appointed sales representative for the Southern Territory which includes Arkansas, Louisiana, Mississippi, Oklahoma and Texas.

C. J. Carney, Jr., managing director of the **Society of Industrial Packaging & Materials Handling Engineers**, Chicago, has been named chairman of the Standard Practices Committee of the **National Assn. of Exhibit Managers**, Cleveland, Ohio. The N.A.E.M. is an organization of exhibit managers whose members are responsible for many of the nation's largest industrial, professional and trade expositions.

Vincent J. Coraci has been elected president of the **Newark Paraffine & Parchment Paper Co.**, the **Newark Glassine Bag Co.**, and the **Protective Packaging Co.**, all of Newark, N. J. Plans for substantial expansion of the facilities and

Roto Bag
Model PO-5
Write for Specifications
BIG BAGS
MAKES 'EM BIG
Perfect for Drumliners, the PO-5 makes bags from flat or gusseted tubing from 2"-27" wide, and up to 60" long. Complete automatic delivery and stacking of giant bags at rates up to 50 per minute.
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Equipped to handle multiple widths — as many as four rolls of tubing simultaneously within stated size ranges thereby obtaining exceptional production rates.
POLYETHYLENE
Big Brother to the famous PO-2, the PO-5 incorporates all the dependable features that have produced consistently fine quality bags. Built for BIG things . . . BIG Bags . . . BIG Production Savings!
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MODERNIZE
SCREW CAPPING OPERATIONS
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FULLY AUTOMATIC
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SCREW CAPPER

Sumbit Sample Containers and Caps for Prompt Introduction to A Gift-Edged Investment!

For Glass and Tin Metal and Plastic Screw Caps

- Quick Change-Overs; Easy Adjustments.
- Trouble-Free; Any Handy-Man Services It.
- Performs the Work of 2 or 3 Men.
- Increased Output, Automatic Operation, Pay for the "TITE-CAP" in about 6 months.
- New Hopper Handles Large Variety of Caps.
- Models for all Types of Capping Operations including Special Closures, Inner Seals, Lids, Plugs, Etc.

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"SCIENTIFIC"
portable
SEMI-AUTOMATIC STRAIGHT LINE
VACUUM FILLER

- Fills Directly from Drum; No Overhead Tanks Required.
- Vials to Quarts, Glass or Tin.
- Up to 10 Spouts for Small Containers.
- Quick Change-Overs. Cleans Itself. 5 Minutes.
- ONLY ONE OPERATOR for Loading and Filling.
- LOW PRICED BENCH and STAND MODELS.

Actually Pays For Itself In A Few Weeks
Write for FREE TRIAL OFFER

Whirlwind
SCREW CAPPER

- Replaces Uncertain Hand Capping; Eliminates Fatigue and Worn-Out Fingers. ANY CAP—ANY CONTAINER—PERFECT SEALING!
- Adjustable Tension Device Controls Cap Tightness.
- Portable, Flexible, Fast; Easy to Operate.

CAN YOU AFFORD TO BE WITHOUT IT?
ACT NOW! Send Sample Caps For FREE TRIAL

SCIENTIFIC FILTER CO.
56 Rose St., New York 38, N. Y.

Plants and people

products of the companies are being formulated. **W. J. Eisner**, president, and **S. J. Eisner**, secretary and treasurer of the companies, have retired from active participation in the firms.

W. E. Vaughn

William E. Vaughn has been named assistant to the vice president in charge of sales of **American Can Co.**, New York. Mr. Vaughn has been serving as assistant general manager of sales for Canco since May, 1951.

Vincent M. Smith has joined the technical service staff of **Federal Adhesives Corp.**, New York. Mr. Smith, formerly with Stein, Hall & Co., has written several articles on industrial adhesives.

Haring Equipment Corp., New York, distributor of Kalix-Dupuy tube-filling machines, has appointed **L. H. Butcher Co.** as its representative on the Pacific Coast, serving Los Angeles, San Francisco, Seattle, Portland and Salt Lake City.

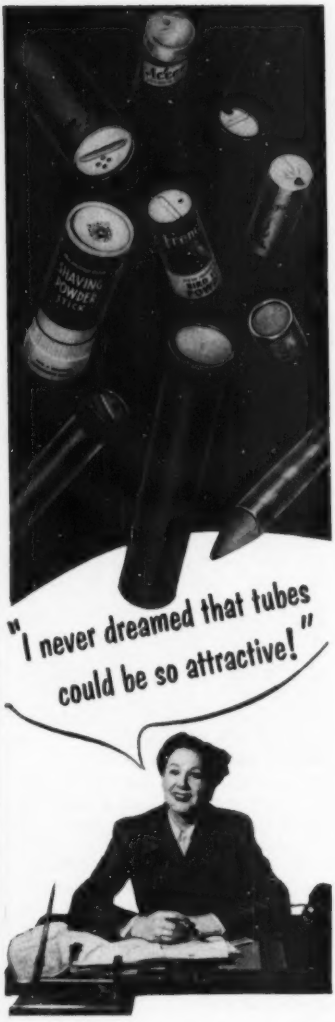
Hazel-Atlas Glass Co., Wheeling, W. Va., has announced the retirement of **R. L. Clark** and the appointment of **Roland E. Keller** as the company's district sales agent with offices in the Fox Bldg., Detroit, Mich. **Robert W. Mellott** and **Robert R. Distler** will assist Mr. Keller.

The William Koehl Co., Cincinnati, Ohio, has sold its Drug Box & Label Div. to the **Pictorial Paper Package Corp.**, Aurora, Ill. The William Koehl Co. plans to devote all its efforts to the regular set-up field and has embarked on an extensive expansion program.

D. H. Brewer

Donald H. Brewer has been elected vice president of the **Container Corp. of America**, Chicago, Ill. As a vice president he will have charge of the folding-carton plants and boxboard mills in the Central Div.

R. R. Heywood Co., Inc., New York, color lithographers now celebrating the 50th year in business announced the following appointments: **R. R. Heywood, Sr.**, chairman of the board; **R. R. Heywood, Jr.**, president; **Donald S. Kelley**, vice

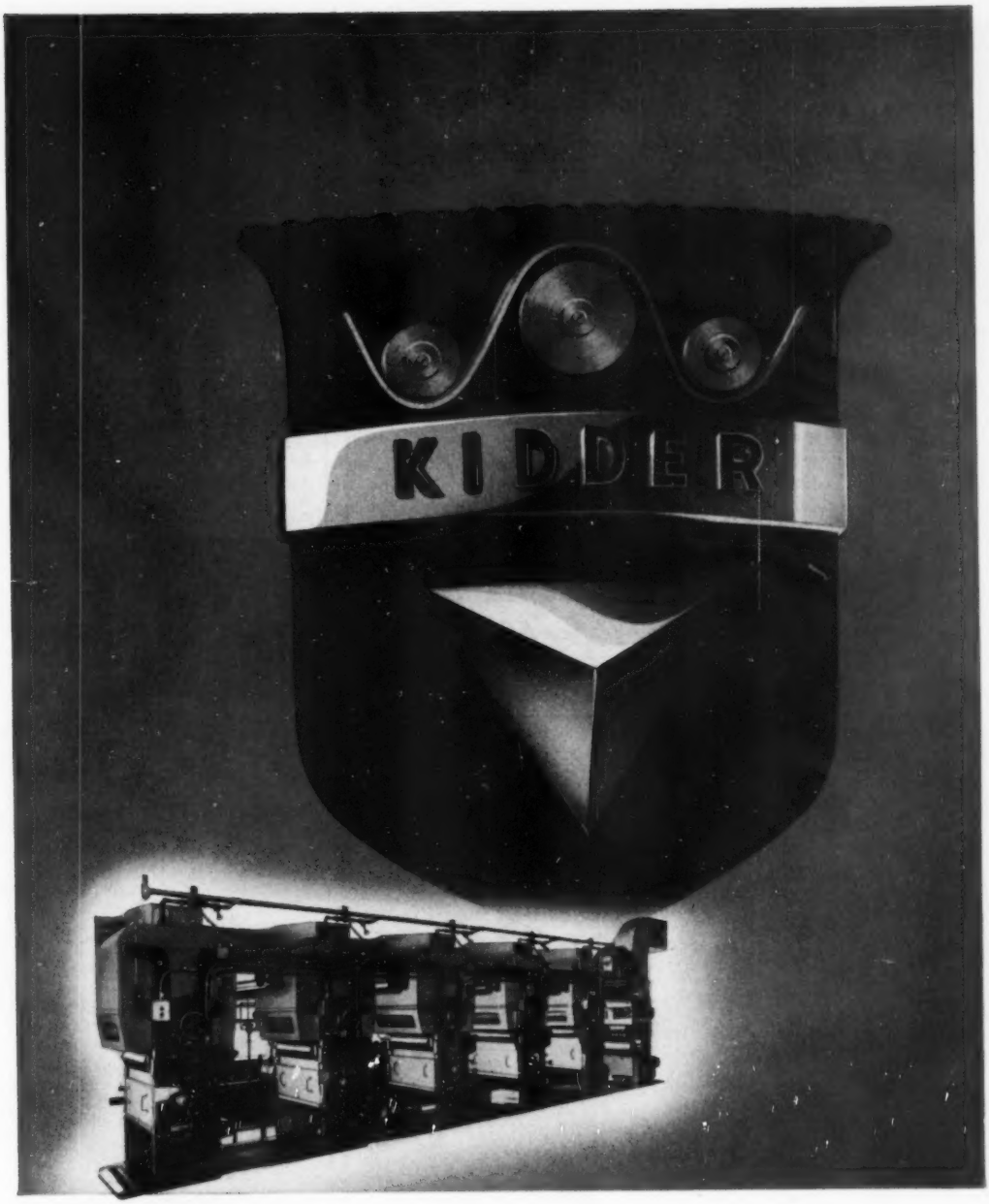


● By showing how dramatically products could be presented and how effectively costs could be reduced, Niemand Bros. has shifted many leading companies to tubular containers.

Niemand Bros. styles tubes up for eye-appeal . . . decks them out with printing and fancy papers . . . coats them . . . gives them paper, metal, or plastic ends . . . and shaker or sifter dispensers, when needed.

In the hands of Niemand Bros. tubes are *high styled*. Ask for suggested designs for your products.

NIEMAND BROS. INC.
PAPER TUBE PRODUCTS



In every field there are recognized leaders to whom quality of product is the supreme consideration.

To such leaders in the packaging and converting fields, Kidder presses and slitters have long constituted the standard by which other equipment is judged. In Kidder multi-color rotary presses for flexographic (aniline), rotogravure, and letterpress, nothing is spared to achieve the known requirements for perfect printing. In slitting, Kidder's shear-cutting action results in clean, accurate, dustless rolls.

For information concerning the finest equipment to fill your converting needs, write:

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You'll fill faster and at lower cost with this automatic

FILLMASTER VIBRATORY FILLER

For dry & semi-dry products

STUYVESANT ENGINEERING COMPANY

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Plants and people

president in charge of commercial and advertising sales; **R. R. Heywood, III,** vice president and treasurer.

After 20 years of association with the **Atlantic Container Corp.,** Long Island City, N. Y., **Moritz Davis** and his brother **Isadore Davis** have retired from active participation in the company. Complete management and full stock ownership will now be in the hands of **Max Feldman** and his sons, **Henry** and **Arthur Feldman.**

Robert Gair Co., Inc., New York, has appointed **William H. Caddoo** and **Wilfred W. Scheide** as assistant to **Norman F. Greenway,** vice president in charge of the

W. H. Caddoo (left) and W. W. Scheide

folding carton division. Mr. Caddoo will be in charge of paperboard production and Mr. Scheide will be in charge of folding-carton production.

Malanco, Inc., Blue Island, Ill., manufacturer of corrugated paper products for bakery, packaging, display and industrial markets, has moved into a new plant at 138th St. and Chatham Rd., Blue Island, Ill. Malanco's present plant will continue the manufacture of insulation and specialty items.

Seven new members have been added to the sales staff of **Oneida Paper Products, Inc.,** Clifton, N. J. The new salesmen and their respective territories are: **Bill Weeks,** the Carolinas; **John Drexelius,** Western New York; **Roy A. Johnston,** Western Pennsylvania; **Roger G. Driscoll,** Ohio, Indiana, Kentucky; **Wally Schaffer,** Eastern Pennsylvania and Southern New Jersey; **Donald W. Ryan,** Connecticut, Massachusetts and Rhode Island; **Saunders A. Bagby,** Virginia and Washington, D. C.

Oxford Paper Co., New York, has announced the following promotions: **T. E. Bruning,** vice president and treasurer; **T. F. Spear,** vice president, public relations; **H. J. Buncke,** vice president, engineering; **Harold M. Annis,** technical director; **Walter W. Holland,** mill manager at Rumford. **Harold L. Peckham** has

This cap is extra strong

. . . for extra production on high-speed machines

● If the speed of your lines is limited by cap breakage, you can boost your output with Armstrong's Hi-Tork* Caps. These caps are specially built to take the torque and impact of modern high-speed lines.

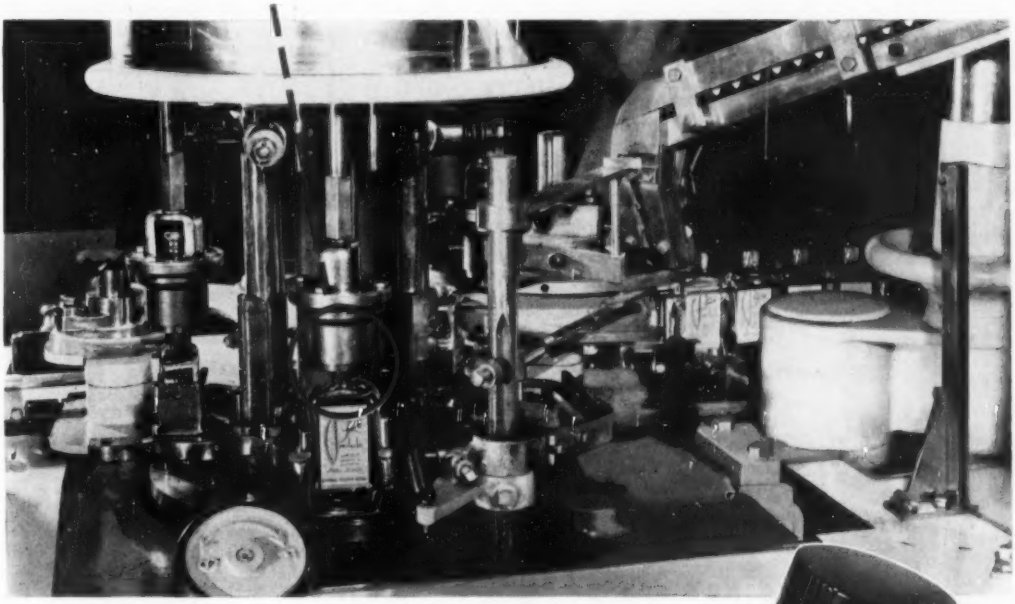
Hi-Tork Caps are heavier, too (weigh them and see). And they're designed so that the skirt, thread, and dome all take their exactly proportionate share of the capping machine's impact. This exclusive feature is the key to their amazing ability to take punishment without breaking.

*T.-M. applied for.

Their recessed design has no projections to chip or cause breakage. And their thread contours have been re-designed to increase the contact area and give you a better seal with less strain on the cap.

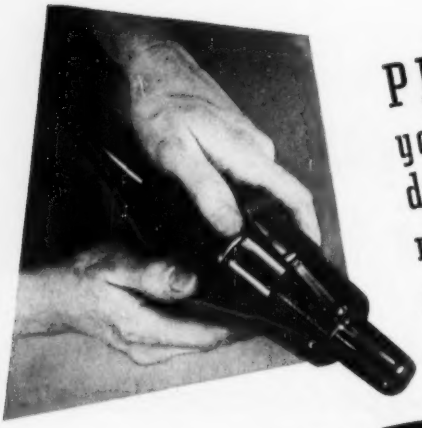
These features will add up to faster capping—with less breakage, fewer rejects, and less downtime.

We'll be glad to help you test "Hi-Tork" Caps on your own lines. For further information, just call your near-by Armstrong office or write Armstrong Cork Company, Glass and Closure Div., 5902 Prince St., Lancaster, Pa.



ARMSTRONG'S "*HI-TORK*" MOLDED CAPS

Molded for extra production on high-speed machines



PROTECT your product during both manufacture and shipment with...

PROX-PEEL

Prox-Peel—plastic packaging—protects and preserves through manufacturing processes—and during shipment.

Prox-Peel applies a loosely adherent film by spraying, brushing, or dipping. There are two types—a molten and a solvent type. Both are used in Specification* requirements of Army, Navy, and Air Corps. There are hundreds of civilian uses.

Increasingly—Prox-Peel is finding favor to protect objects and surfaces through the rigors of manufacture and assembly. Then it is peeled off—is frequently remelted or dissolved and re-used.

*JAN-C-149; AN-C-117b; AN-C-145; AXS-1756; MIL-P-3038.

For FREE Prox-Peel pamphlet—describing type, application, apparatus—write to...

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PAOLI PENNA.

WEST COAST REPRESENTATIVE— RAMSELL PRODUCTS, INC., 420 MARKET ST., SAN FRANCISCO, CAL.

Plants and people

joined Oxford as assistant in product development under Mr. Annis.

J. T. Kirkpatrick

James T. Kirkpatrick has been appointed general sales manager of the **Sutherland Paper Co.**, Kalamazoo, Mich. In his new position Mr. Kirkpatrick will be in charge of Sutherland's sales policies and programs in all marketing divisions and will direct the activities of the company's field sales force. He succeeds **R. F. Neff, Sr.**, who has resigned.

Lt. Col. John Mount has been released from a 21-month recall to active duty with the **U. S. Air Force** as chief of the Packaging Section in the Directorate of Supply & Services, Office of the Deputy Chief of Staff, Materiel. Col. Mount also acted as vice chairman of the Air Force Packaging and Materials Handling Board. **D. M. Holenshade** will succeed Col. Mount, who plans to return to his former position as manager of the **Marine Service Dept. Insurance Co. of North America**, Philadelphia, Pa.

Wilmer J. Balster has resigned as vice president and general manager of the **Don L. Quinn Co.**, Chicago, to establish a consulting service in testing, shipping containers and transportation, to be known as **The Wilmer J. Balster Associates.** Mr. Balster will operate from his home at 3511 N. Sheffield Ave., Chicago.

G. L. Everitt

Milprint, Inc., Milwaukee, Wis. printing and packaging firm, has appointed **George L. Everitt** as sales promotion manager. Mr. Everitt will develop promotional material and assist in sales of the variety of Milprint products.

Packageneers, Cincinnati, Ohio, manufacturer of military specification bags, barriers and case liners, has acquired all of the machinery, equipment and good will of **The Houser Packaging Corp.**, Indianapolis, Ind.

Plax Corp., West Hartford, Conn., manufacturer of squeeze bottles and other plastics products, has started production at its new plant in the Shively section of Louisville, Ky. Manufacture of polyethyl-

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NOW WITH *NEW* PLASTIC SIFTERS . . .

Cross Swing Sifters - - - today's modern container - - - affords your package an all-round versatility which makes it stand out in competition and step out with greater sales for you.

Cross Swing Sifters are being used for cosmetics, foods, drugs, pharmaceuticals or any other product that can be dispensed through a shaker or sifter . . . . Can we serve you?

Samplers

Cross round miniatures, an exact replica of your full size container, provides the answer for the perfect sample package. Both full size and samplers can be filled with any standard filling equipment.

Ask for a representative to call, or write for details and samples.

CROSS PAPER PRODUCTS CORP.

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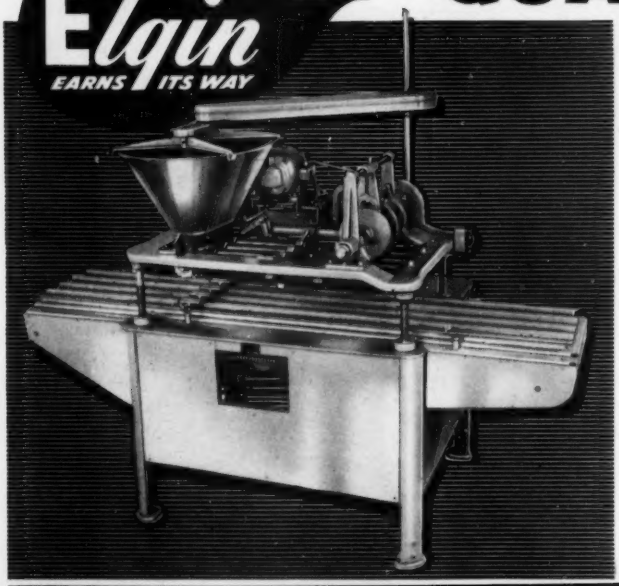
EARNS ITS WAY



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THRIFT—Economy-wise production men choose Elgin Machines for their lower initial cost, minimum maintenance and operating expense.

VERSATILITY—Widely utilized by large and small plants because of their quick, simple changeover to accommodate a broad range of products and container sizes.

DEPENDABILITY—Long years of trouble-free, continuous production distinguish the Elgin equipment now serving leading packers in the food, paint, cosmetic, oil and various other industries.

IDEAL FOR GLASS OR TIN

Extensively used to fill mustard, peanut butter, relish, jams, jellies, mayonnaise, soups, creams, ointments, waxes, animal foods, horseradish, roofing cement and similar products.

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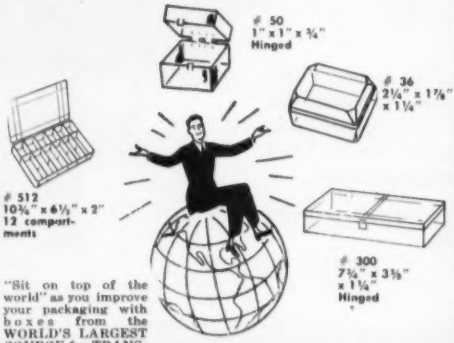
Thousands of products are packaged in our

Transparent Plastic Boxes!



"Sit on top of the world" as you improve your packaging with boxes from the WORLD'S LARGEST SOURCE for TRANSPARENT PLASTIC BOXES. 1001 different rigid Polystyrene boxes from 50 molders . . . in stock, **no mold costs**, all sizes, shapes, styles . . . or we will design one to meet your need. Send us a sample of the product you desire to package. We will recommend the best box without obligation.

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NOW! *Special Design* ENVELOPES-BAGS

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Plants and people

ene sheet, Layflat tubing, plastic bottles and Polyflex sheet is scheduled.

Miss Rena Pasqualini has been appointed as administrative assistant in the sales department at Plax.

H. W. Johnston

Stecher-Traung Lithograph Corp., Rochester, N. Y., has announced the retirement of **Hal W. Johnston**, executive vice president and director of sales. Mr. Johnston had been with the company for 35 years. He retains his interest in the corporation, remaining as a member of its board of directors.

Stone Container Corp., Chicago, has appointed **Joseph E. Lang** as a national representative in the corrugated box firm's Eastern market area. Mr. Lang will work out of Stone's Philadelphia corrugated box division and the New York City office as special sales representative.

John W. Thomson, Jr., has joined the sales staff of **Kupfer Bros. Co.**, New York, manufacturer of surface-coated papers. Mr. Thomson joins Kupfer at a time when the company is expanding both its sales force and plant facilities. New equipment is being added to the company plant at Northbridge, Mass., and a new research laboratory, to be opened shortly, is now under construction.

Technical Tape Corp., New York, manufacturer of adhesive, cellophane and surgical tapes, has established a research division in a newly leased building at Sedgewick Ave. and 176 St., the Bronx.

Fibreboard Products Inc., San Francisco, Calif., has appointed **H. L. Rammer** as technical director for all 16 plants of the company. **J. H. Grady** has been transferred to the head office as assistant to the general sales manager. **J. F. Holmes** succeeds Mr. Grady as assistant sales manager, Southern District, with headquarters in Los Angeles.

H. L. Rammer

The Reynolds Metals Co., Louisville, Ky., has assigned **James E. M. Barlow** to the firm's general sales office in Louisville to serve as special staff assistant in the Reynolds Dairy and Meat Market divi-

case history

why Berea Plastics uses Avery Kum-Kleen labels

formerly the full time of three girls...one on each shift...was required to apply water-moistened labels to the combination salt and pepper shakers made by Berea Plastics, Berea, Ohio.

now no special labeling operators are needed because the simplified, Kum-Kleen labeling method permits the press operator to label each shaker as he removes it from the mold.

speed and economy—Kum-Kleen pressure-sensitive labels are LAID ON fast with a finger-touch—no moistening, no mess! They stay neat and attractive—won't dry out, pop, curl or peel—yet are easily removed by the housewife without soaking or scraping.

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AVERY
Kum-Kleen
Originators of Pressure-Sensitive labels

AVERY ADHESIVE LABEL CORPORATION

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☐ Tell us about your dispenser
☐ Have the Avery label man call

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don't say "aniline," say FLEXOGRAPHIC

don't say "rubber plates," say MOSSTYPES®

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MOSSTYPES are the pre-madeready, precision-molded rubber printing plates you need for high-quality flexographic printing. MOSSTYPES are the lowest-cost insurance you can buy for clean, sharp printing and trouble-free press runs.

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WRITE TODAY for FREE FIBRO-PAD Sample Kit and name of your nearest Distributor! T.M. Reg. W.C. Co.

CHOICE OF 5 OUTER WRAP BARRIER MATERIALS MEET ALL GOVERNMENT SPECIFICATIONS:

1. JAN-B-121: Grade A, Greaseproof, Non-Corrosive
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3. JAN-P-125: Type C-1 Waterproof, Asphalt Laminated
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MANUFACTURERS OF FIBRO WATERPROOF CASE LINERS · SKID COVERS · BLANKETS · SHROUDS · KRAFT LINERS & COVERS

Plants and people

sion. Mr. Barlow will supervise national promotion of the Erickson (aluminum) milk case.

Owens-Illinois Glass Co., Toledo, Ohio, has announced the promotion of **Kent S. Upham** as sales manager to the food industries. **Robert E. Graham** has been named assistant sales manager. Mr. Upham, who joined Owens-Illinois in 1930, has served in a variety of capacities and was appointed as assistant sales manager to the food industries in 1952.

K. S. Upham (left) and R. E. Graham

Sun Chemical Corp., 10th St. & 44th Ave., Long Island City, N. Y., has formed a new division, the **Sun Supply Co.**, also of Long Island City. **Jack Mather** will be in charge of the new organization which will sell and service supplies for all branches of the graphic arts.

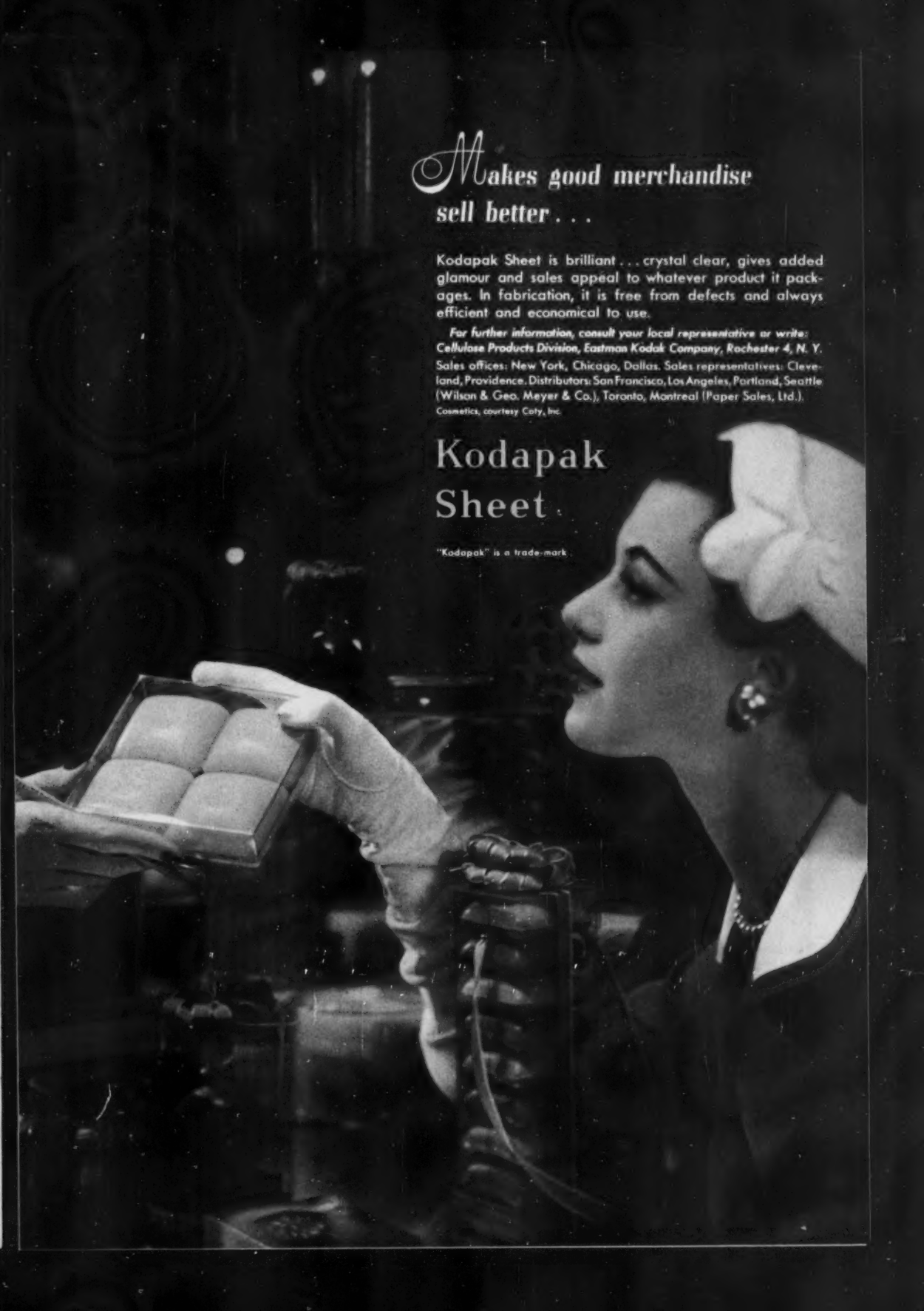
The White Metal Mfg. Co., Hoboken, N. J., manufacturer of collapsible tubes and metal can spouts, has appointed **Robert M. Coyner** as midwestern sales manager. Mr. Coyner's headquarters are at 2099 Montcalm St., Indianapolis, Ind., in the offices of a new collapsible-tube manufacturing plant owned by **Metal Container Corp.**, whose products are sold and distributed by White Metal.

R. M. Coyner

Philip W. Hatch has been elected a vice president of **Thatcher Glass Mfg. Co., Inc.**, Elmira, N. Y. Mr. Hatch has been placed in charge of sales for the McKee Glass Div. and will report directly to **David R. Parfitt**, vice president and general sales manager.

Staplex, Inc., Herrin, Ill., has elected **Werner Schafroth** president of the company. Mr. Schafroth was formerly president of International Staple & Machine Co.

Walter E. Trum, Jr., has succeeded his father as president of **E. J. Trum, Inc.**, Brooklyn, N. Y., manufacturer of cartons.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Kodapak Sheet is brilliant . . . crystal clear, gives added glamour and sales appeal to whatever product it packages. In fabrication, it is free from defects and always efficient and economical to use.
For further information, consult your local representative or write: Cellulose Products Division, Eastman Kodak Company, Rochester 4, N. Y.
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Cosmetics, courtesy Coty, Inc.
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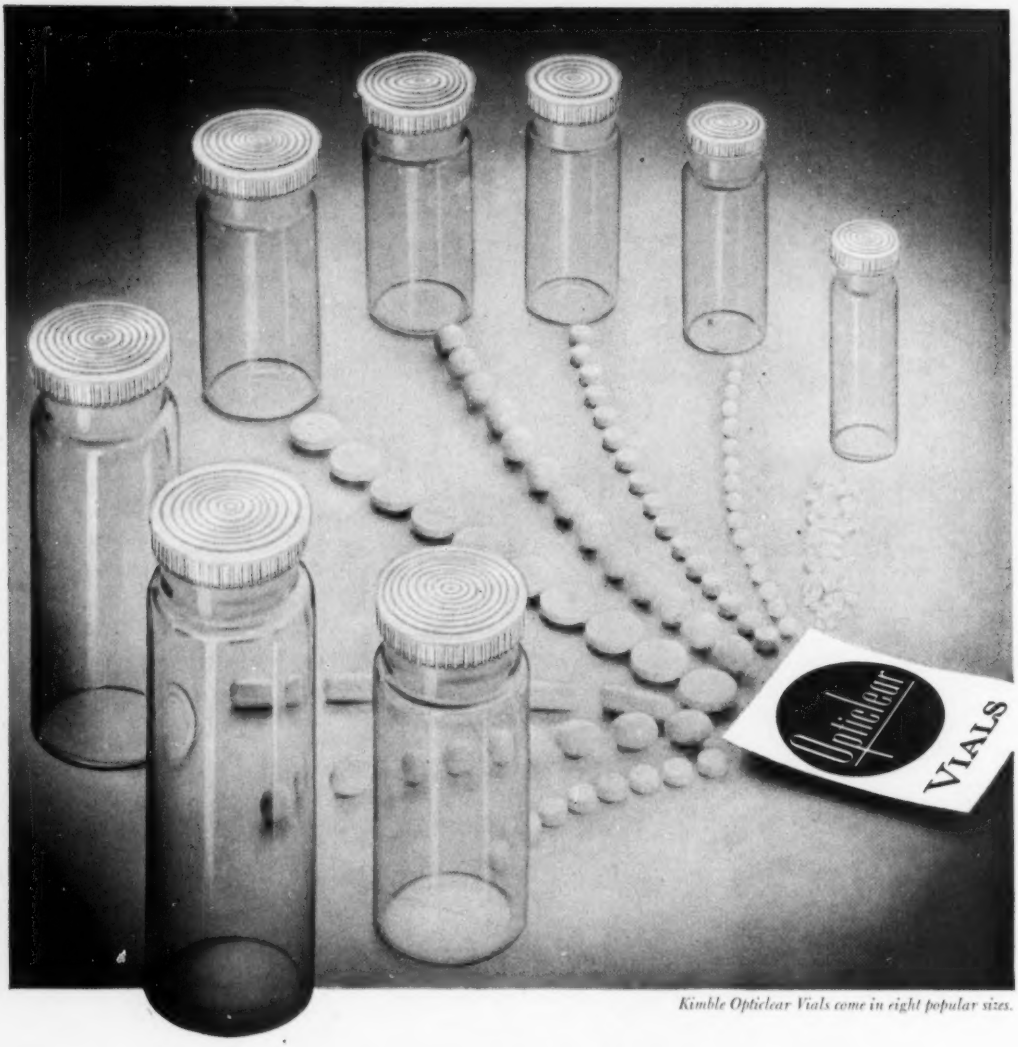

Kimble Opticlear Vials come in eight popular sizes.

LEADERSHIP is our business

THE ORIGINAL MEANING of business is being busy. Kimble keeps busy maintaining its traditional leadership in the quality of the types of glass products it produces. Users of such products have shown their approval of Kimble policies by making Kimble the leader in volume as it is in quality.

Kimble Opticlear Vials are an example. They were designed to offer the utmost in protection of dry products that must be kept dry. They have swiftly assumed leadership in the vial field. If you are looking for a container to help you attain or maintain leadership for a product of yours, consult Kimble.

Kimble Makes Glass Serve You

KIMBLE GLASS COMPANY

Toledo 1, Ohio

Subsidiary of Owens-Illinois Glass Company

Plants and people

Mr. Trum, Sr., has become chairman of the board and continues as treasurer of the corporation. Succeeding Mr. Trum, Jr., as vice president of the firm is his sister, **Marjorie L. Trum.**

Shellmar Products Corp., Mt. Vernon, Ohio, has appointed **Ben Verson** as vice president and general manager of Shellmar's Flexible Packaging Div. and has elected him a director of the corporation. Mr. Verson has also been appointed to the board of directors of **Standard Printing Co.**, Columbus, Ga., a subsidiary of Shellmar. Three other promotions affecting Shellmar's Flexible Packaging Div. are **A. W. Scholp,** plant manager; **T. A. Porter,** plant superintendent; **H. T. Smith,** controller.

B. Verson

P. S. Holmquest

P. S. Holmquest has been named acting manager of the Glass Container Dept., Glass and Closure Div. of the **Armstrong Cork Co.**, Lancaster, Pa. Mr. Holmquest has assumed full responsibility of the Glass Container Dept. during the leave of absence of **H. C. Seaman,** manager of the department.

Ed Westervelt, Eastern sales manager of the **Package Machinery Co.**, Springfield, Mass., died suddenly on Dec. 31 at the age of 55. Mr. Westervelt, well known and highly regarded throughout the packaging field, had been with the company for a period of 26 years.

Aaron C. Horn, chairman of the executive committee of **Sun Chemical Corp.**, Long Island City, N. Y., died at his home on Nov. 26 at the age of 76. Until his death, Mr. Horn had been active in the affairs of Sun Chemical, of which he was a director.

John L. Dolphin, vice president in charge of sales and a director of **Sealright Co., Inc.**, Syracuse, N. Y., died on Dec. 23. Mr. Dolphin, well known in the dairy, ice cream and food industries, had been with Sealright for 32 years and was responsible for the direction of the company's sales organization.

The Master's Touch in
THIN PAPER ARTISTRY
MG-MF TISSUES and MANIFOLDS
LIGHTWEIGHT WRAPS
WAXING BASE PAPERS
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SHAWANO plays them up... or down... to match your packaging symphony
We can solve your wrapping and packaging needs for THIN papers that sing out in color or toughness or barely whisper with delicate softness. Whatever your basic needs — or special protective features desired, our symphony of talented paper makers, technicians and machinery can blend a perfect paper to fulfill the requirements. You'll find our stock line of THIN papers much to your liking, too. Ever increasing in scope, it's a safe bet that between it and our ability to "customize" there's practically no THIN paper grade we can't provide. We'd like to show you how Shawano papers are "tissue thin — yet tensile tough." A letter or phone call will do it.
Write or call for Sample Grades
SHAWANO THIN PAPERS ARE MADE FOR:
Protective packing and wrapping men's, women's and children's clothing, shoes, furs, gloves, millinery, hosiery, handbags, accessories, cosmetics, jewelry and gifts
Wrapping and interleaving ferrous and non-ferrous metals, machine parts, automobile parts, electronics, gold, silver, copper, brass, aluminum, stainless steel, cutlery and band instruments
Papers for business forms, stationery, advertising
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CONVERTERS — Besides tissues, thin papers and light weights, Shawano special izes in semi-creped base stocks for napkin and towel conversion and other uses.
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For your information

The annual **Industrial Packaging & Materials Handling Exposition** technical short course and the **Protective Packaging & Materials Handling Competition**, sponsored by the **Society of Industrial and Materials Handling Engineers,** will be presented in New England this year for the first time. The 1953 triple event will be held in Boston, Oct. 20-21.

The **Industrial Bag & Cover Assn.** has announced an industry-wide Trade Practice Conference to be held under the auspices of the **Federal Trade Commission,** Washington, D. C., on Feb. 24 for suggesting rules that will provide a system of self-regulation by the industry itself. All manufacturers, distributors and other interested parties are being urged to be present at the Federal Trade Commission Auditorium in Washington at 10:00 a.m., Feb. 24, to express their ideas on these proposed rules. **Philip O. Deitsch,** administrative officer of the association, emphasized that these rules will apply equally to all buyers and sellers of the industry's products, regardless of their association status.

Howard M. Palmer of Lewis-Shepard Products, Inc., was elected president of the **Materials Handling Institute** for 1953 at its recent annual meeting. Mr. Palmer succeeds **L. W. Shea** of the Union Metal Mfg. Co., who now becomes a director. **Charles B. Elledge** of the General Electric Co. was elected first vice president and **Walter E. Schirmer** of the Clark Equipment Co. was elected second vice president. The 1953 directors include: **E. W. Allen** of Thomas A. Edison, Inc.; **D. H. Bitney,** Union Steel Products Co.; **George R. Brockway,** of the Rapids-Standard Co., Inc.; **E. J. Byrne** of Chisholm-Hoist Corp.; **J. W. Conklin** of the Yale & Towne Mfg. Co.; **G. J. Hanhauser** of Fab-Weld Corp.; **Wilbur Mayer** of the Louden Machinery Co.; **William H. Noelting** of Faultless Caster Corp.; **M. G. Peck** of the Clark Equipment Co.; **W. B. Renois** of U. S. Steel Co.; **C. H. Strauss** of Ironbound Box & Lumber Co.; **S. K. Towson** of The Elwell-Parker Electric Co.

H. M. Palmer

The recently completed results of a nationwide consumer market survey by the Department of Commerce and the Committee for Economic Development will be presented at the **American Management Assn.'s** three-day national marketing conference, Feb. 9-11, Hotel Statler, New York. The findings of the study, which dealt with the markets that will be available to or can be stimulated by manufacturers as defense production slackens, will be summarized by **M. Joseph Meehan,** director of the Commerce Department's Office of Business Economics. The Office of Distribution of the Dept. of Commerce will set up a booth to show how its market studies can be of practical aid to businessmen.

The Industrial Bag & Cover Assn. has announced the inauguration of an I.B.C.A. award for "A form-fitting flexible package for an article not presently packaged in bag or cover form," with three cash prizes of $500, $250 and $100. Entries will be judged for uniqueness, simplicity of design, marketability, serviceability and breadth of application. Entries must be submitted to the chairman of the Judges Committee by Sept. 15 and awards will be made in October. Detailed information on the contest can be obtained from the Industrial Bag & Cover Assn., 19 W. 44 St., New York 36, N. Y.

A new and revised 26-page illustrated book, "Pack to Attract," published by the **Hinde & Dauch Paper Co.,** emphasizes and illustrates the role of corrugated packages as dramatic salesmen. It suggests that creative packages have a function of product promotion which is equally as important today as their primary function of product protection. The book is available on request to the Hinde & Dauch Paper Co., Sandusky, Ohio.

Exhibiting companies will display thousands of new models of materials-handling equipment at the **Materials Handling Exposition** at Convention Hall, Philadelphia, May 18-22. The stress this year will be on systems of materials handling and the use of various types of equipment to perform special functions. The exposition is expected to attract more than 25,000 top management executives from all over the United States and from 40 foreign countries as well. In addition to the show, a conference will be held under the sponsorship of the **American Material Handling Society.** Advance registration cards and hotel information may be obtained from **Clapp & Poliak, Inc.,** exposition management, 341 Madison Ave., New York 17.

The Lake Erie Section of the **Technical Assn. of the Pulp and Paper Industry** has announced plans for a Measurement and Control Conference on the theme "Measurement and Control of Paper and Paperboard Manufacture and Conversion —Present and Future," to be held May 21-22 at the Carter Hotel, Cleveland.

Under the leadership of **E. H. Balkema of Colgate-Palmolive-Peet Co.,** the rapid growth of the Printed Packaging Materials Committee of the **Packaging Institute** has led to the creation of a new division, which will be known as the **Package Printing Division.** The Technical Operations Committee named Mr. Balkema as division chairman.

Announcements and entry blanks are now being mailed for the Third Lithographic Awards Competition of the **Lithographers National Assn.** Closing date for entries is Feb. 28. Panels of judges will rate entries for quality of lithography, art and design,

What's doing

Feb. 14-17—**Institute of American Poultry Industries,** annual fact-finding conference; Municipal Auditorium, Kansas City, Mo.

Feb. 16-18—**American Management Assn.,** personnel conference, Palmer House, Chicago.

Feb. 16-19—**Technical Assn. of the Pulp & Paper Industry,** Commodore Hotel, New York.

Feb. 17-20 — **National American Wholesale Grocers,** Morrison Hotel, Chicago.

Feb. 18-20—**The Society of the Plastics Industry,** eighth annual Reinforced Plastics Div. Conference, Shoreham Hotel, Washington, D. C.

Feb. 18-20—**National Cotton Council of America,** Ogelthorpe Hotel, Savannah, Ga.

Feb. 21—**Canning Machinery & Supplies Assn.,** trade show, Chicago.

Feb. 21-25—**National Canners Assn.,** 46th annual convention, Chicago.

Mar. 1-4—**National Frozen Foods Convention,** Conrad Hilton Hotel, Chicago.

Mar. 2-6—**American Society for Testing Materials,** Detroit, Mich.

Mar. 15-20—**American Chemical Society,** Los Angeles.

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and functional value, and certificates will be awarded in each of 44 classifications. **Paul R. Lang** of Ketterlinus Lithographic Mfg. Co., is chairman of the Awards & Exhibit Committee. Winning entries will be announced at the exhibit opening on May 18 at 115 E. 40 St., New York, and will be on display for two weeks. They will also be exhibited in Chicago during LNA's 48th annual convention at the Edgewater Beach Hotel, June 16-18, followed by a traveling exhibit to principal U. S. cities during the year. Details and entry blanks may be obtained from the association's headquarters at 420 Lexington Ave., New York, or from its Western office at 127 N. Dearborn St., Chicago. An illustrated catalog of winners will be published.

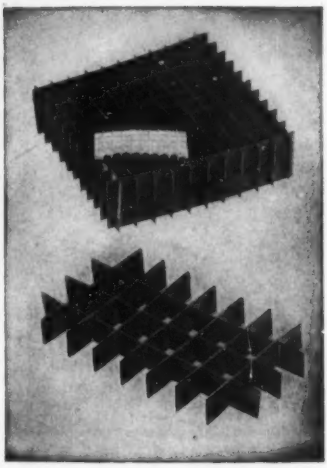
The results of a recent survey by the **National Fibre Can & Tube Assn.** indicate that national sales of fibre cans and tubes can be increased more than 50% if modern market research and public relations methods are used, reported **Paul S. Hanway,** managing director of the association, at the group's recent Eastern Division meeting.

P. S. Hanway

Department stores and tool manufacturers were found to be prospects for broader uses of fibre containers, as well as the chemical, cosmetic, radio and food industries, department and chain stores. Total dollar sales volume of the industry during the fourth quarter, Mr. Hanway said, appears to be the largest in the industry's history. The market survey indicated that probably more than 10% of all packaged products could be packaged in fibre cans and tubes, Mr. Hanway added. **Ralph B. Busch** of Sefton Fibre Can Co., president of the association, was chairman of the meeting. Other speakers included **Paul Weitz** of the National Adhesives Co. and **Dr. Johan Bjorksten** of Bjorksten Laboratories.

The annual convention of the **National Assn. of Glass Container Distributors** will be held Feb. 14-15 at the Warwick Hotel, Philadelphia.

The vast range of basic materials available to manufacturers will be discussed at a three-day conference to be held at the Hotel Roosevelt, New York, June 16-18. The conference will supplement the first **Exposition of Basic Materials for**



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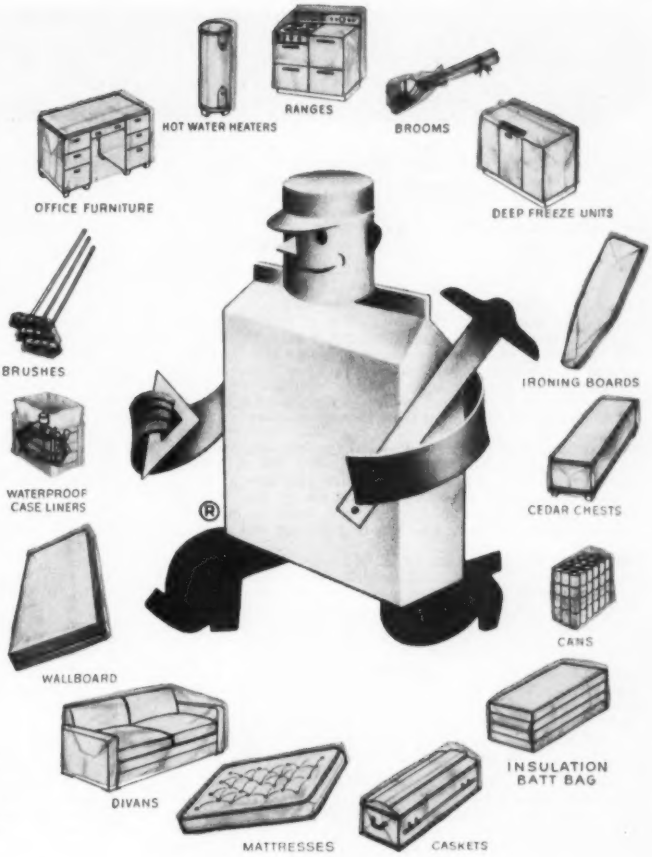
Industry, to be held at Grand Central Palace, New York, June 15-19. The combined events will provide the first clearing house of information for the entire field of materials for hard-goods manufacturing, according to **Clapp & Poliak, Inc.,** exposition management. A board of sponsors for the show and conference has been formed, with **Don G. Mitchell** of Sylvania Electric Products, Inc., as chairman. **Theodore C. DuMond** of *Materials & Methods* will serve as general chairman of the first conference. More than 2,000 experts are expected to be on hand to answer questions for an anticipated 15,000 visitors. Admission will be restricted to top management executives, project engineers, product designers, materials engineers, production experts, research men, and sales and marketing executives. Advance registration cards may be obtained from Clapp & Poliak, Inc., 341 Madison Ave., New York 17.

The Assn. of Consulting Chemists & Chemical Engineers, Inc., has appointed **Robert T. Baldwin** as executive secretary and assistant treasurer and **A. B. Bowers** as director of publicity and assistant executive secretary. The association has scheduled two meetings: a symposium and dinner on April 21, Hotel Belmont Plaza, New York, and the 25th anniversary annual meeting on Oct. 27, also at the Belmont Plaza.

A 15-week course on package design is being conducted by **New York University's Div. of General Education.** Coordinator is **Robert I. Goldberg,** vice chairman of the New York Chapter, Industrial Designers Institute and fellow of the Package Designers Council. Beginning Feb. 5, the course is held Thursday evenings at the University's Washington Sq. Center. Guest lecturers include: **Pearl Hagens,** MODERN PACKAGING; **Frank Gianninoto, Egmont Arens** and **Jim Nash,** package designers; **Montague Lee,** The Composing Room, Inc.; **Monroe Adamson,** Consolidated Lithographing Corp.; **Willard F. Deveneau,** National Folding Box Co., Inc.; **J. Whitney King, Jr.,** American Can Co.; **Ira Harmon,** plastics engineer; **Allyn C. Bearsell** and **Alfred Hoffman,** Container Laboratories, Inc.

The semi-annual meeting of the **Packaging Machinery Mfrs. Institute** will be held April 18-19 at the Sheraton Hotel, Chicago. The Sheraton will be PMMI headquarters during the annual Packaging Exposition, April 20-23, at Navy Pier.

The Owens-Illinois Glass Co. will première a new 15-min. sound-color film called "Packing Foods in Glass in 1953" in its booth at the Canning Machinery & Supplies Assn. Exhibit, Feb. 21-25, at the Conrad Hilton Hotel, Chicago.



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U.S. patents digest

This digest includes each month the more important patents of interest to those who are concerned with packaging materials. Copies of patents are available from the U. S. Patent Office, Washington, at 25 cents each in currency, money order or certified check; postage stamps are not accepted.

Edited by H. A. Levey

Box-Making Machine, V. D. Hery and B. L. Rich (to American Tool Works, Cincinnati, Ohio). U.S. 2,618,207, Nov. 18. In a box-making machine of the type forming boxes by crimping and folding sheet plastic blanks, a frame, a conveyor chain translatably mounted in frame, carrier elements detachably mounted on chain at spaced points, carrier elements gripping plastic blanks and translating them through machine.

Box Assembly Rack, O. H. Williamson (to International Paper Co., New York, N.Y.). U.S. 2,618,208, Nov. 18. A box-section assembly rack to effect the assembly and storage of box sections, comprising a mounting trestle, a storage cage mounted thereon and folding means comprising a series of outwardly extending deflector shoes attached to receiving end of cage.

Package for Plural Articles, G. A. Moor (to Reynolds Metals Co., Richmond, Va.). U.S. 2,618,380, Nov. 18. A package for plural articles consisting of a wrapper and an inner liner of relatively stiff but flexible material faced on its inside with metallic foil, having a plurality of articles in superposed position in said liner.

Box Puff, C. H. Gilbert (to Farrington Mfg. Co., Boston, Mass.). U.S. 2,618,381, Nov. 18. A puff for insertion in a box comprising a polygonal sheet of semirigid material having intersecting score lines substantially parallel to the edges of the polygonal sheet to divide the sheet into a peripheral portion and a central base portion.

Packaging of Oil-Soluble Dyes in Oil-Soluble Capsules, J. M. Hatfield (to Pure Oil Co., Chicago, Ill.). U.S. 2,618,384, Nov. 18. An article of manufacture for dyeing petroleum products comprising a petroleum hydrocarbon oil-soluble dye blended with a paraffin wax to form a paste containing at least two parts dye to one part wax, the dye paste being enclosed in a thin-walled, hard-wax container, said container being fabricated from a microcrystalline wax having a melting point above about 130 deg. F.

Label-Affixing Machine for Containers, J. Kantor, E. Rosenberg and A. C. Small (to The Liquid Carbonic Corp., Chicago, Ill.). U.S. 2,618,397, Nov. 18. In a labeling machine, in combination, a rotary table, a container support mounted upon table, a label picker disposed adjacent to path of travel of support and movable into and out of path of container support and a pair of spaced-apart picker-finger arms pivotally mounted at upper ends on supporting member.

Sealing Machine, H. E. Stover (to Anchor Hocking Glass Corp., Lancaster, Ohio). U.S. 2,618,424, Nov. 18. In a device for applying closure caps to containers, the combination of means for presenting containers to a closure delivery station and means for delivering closures to containers at said station.

Machine for Applying and Sealing Closures on Containers, H. E. Stover (to Anchor Hocking Glass Corp., Lancaster, Ohio). U.S. 2,618,425, Nov. 18. In a machine, the combination of an inclined guideway for receiving and delivering closure caps, a member at the lower end of the guideway having a plurality of spaced magnets thereon adapted to pass over the cover of a closure cap as a container passes under the member and pulls a closure under it, to force the closure cap on the container, and means for yieldably mounting said member.

Shock-Resistant Container, J. K. M. Harrison, Gainesville, Va. U.S. 2,618,428, Nov. 18. A container having a first closure wall within said container but spaced from the end of said container, a first flange extending from said first wall to the end of said container, the end of the container having a portion folded over and enclosing a part of said first flange and a second wall having a second flange extending toward the first wall.

Shipping Container, J. S. Donnell (to Florida Fibre Box Co., Sarasota, Fla.). U.S. 2,618,429, Nov. 18. A shipping container comprising an open-top box-like body formed of comparatively stiff material and embodying a rectangular bottom, a pair of opposed sides connected to and extending upwards from the side margins of the bottom and a pair of opposed ends connected to and extending upwards from the end margins of the bottom and provided on the top margin thereof with normally upstanding laterally bendable locking tongues.

Article-Dispensing Package, J. M. Adams, Atlanta, Ga. (to John R. Gammeter, Akron, Ohio). U.S. 2,619,226, Nov. 25. A dispenser for relatively soft, flexible, resilient articles, comprising a container for the articles, said container having at least a front wall of relatively stiff but flexible material in which is punched a tab connected to the wall at one side of the tab to provide a hinge point therefor, said tab defining a dispensing opening in front wall and being adapted normally to close the opening by frictional engagement of the edge portions of the tab with complemental aperture edge portions in said wall.

Packaging System, C. J. Arthur, Westport, Conn. U.S. 2,619,227, Nov. 25. A telescoping double tubular corrugated paper package for a plurality of incandescent electric-light bulbs arranged in a row with said bulbs having spherical base portions with their narrow necks projecting upwardly, an inner corrugated paper tube composed of an elongated strip of corrugated paper with the rows of corrugations extending transversely of the strip and with a series of openings for said necks extending in a row along the middle of the strip and the sides of the strip being folded down and around the sides of the spherical base portions and overlapped and fastened together below the bottoms of the spherical base portions.

Machine for Feeding, Transferring and Compacting Articles into a Unit Layer, J. E. Socke (to American Can Co., New York, N.Y.). U.S. 2,619,237, Nov. 25. In a machine for feeding spaced rows of containers and for arranging them in a pattern formation, the combination of an intermittently operated conveyor for feeding said rows of containers, a platform located adjacent said conveyor, a lifting device movable relative to and between said conveyor and platform for lifting the articles as a unit layer from the conveyor and for depositing them onto said platform.

Label-Applying Machine, R. J. Gaubert (to Simplex Packaging Machinery, Inc., Oakland, Calif.). U.S. 2,619,247, Nov. 25. Mechanism for applying labels to spaced portions of a movable web of material, comprising a frame rotatably supporting a roll of labels to be applied to said web.

Tape-Applying Tool, C. Menge, Jersey City, N.J. U.S. 2,619,248, Nov. 25. A tape-applying tool comprising a member having therethrough a tape-receiving passage to deliver adhesive tape, a roller on the member axially just above the free end of the passage and extending below the plane of the upper wall of the passage, said member having a pressing face under the roller.

Liquid Measuring and Pouring Attachment, W. H. Duggan, Chicago, Ill. U.S. 2,619,263, Nov. 25. In a liquid measuring and pouring attachment, a receptacle having a liquid measuring space and a first single tubular passage adapted for application to a container outlet, said single tubular passage constituting both a liquid passage and an air passage, receptacle being closed at one end and having a pouring outlet at the other end.

Closure Plug and Coaxal Apertured Sealing Cap for Containers, W. R. J. Jacobsohn, London, England. U.S. 2,619,265, Nov. 25. A closure engageable with the neck of a container from which flowable substance in the form of a liquid, semiliquid, paste and the like is to be dispensed comprising a transverse wall terminating in a plug and positioned to cover one end of the neck of the container, a cap having a top wall and engageable with said neck, a passageway extending through said top wall from the inner surface to the outer surface thereof and being substantially coaxial with said plug.

Dispensing Closure, T. M. McDonald, Moultrie, Ga. U.S. 2,619,266, Nov. 25. A container having an integral annular

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neck portion provided with a circumferential groove and having a round flat top, said flat top having a plurality of orifices formed therein and a hollow cap member rotatably mounted on said neck portion and having a round flat top provided with a central opening and an annular depending side wall.

Container Feeding and Filling Mechanism, H. C. Smith and J. C. Petrea (to Wright Machinery Co., Durham, N. C.). U.S. 2,619,273, Nov. 25. In a machine for filling open-topped containers, a continuously movable conveyor for moving a line of containers past a filling station, means for engaging and stopping successive containers at said station and for releasing successive containers to said conveyor after filling thereof.

Fluid Feeding Apparatus, A. E. Ceiger and H. Onali (to Western Electric Co., Inc., New York, N.Y.). U.S. 2,619,274, Nov. 25. In an apparatus for feeding measured quantities of a fluid to successive articles, a turret mounted for intermittent rotary motion about a given axis, means disposed at spaced positions in the turret removably to receive and support the articles.

Folding Box Employing Non-Scorable Sheeting, R. M. Bergstein, Cincinnati, Ohio. U.S. 2,619,275, Nov. 25. In a knockdown box structure, a plurality of panels of non-scorable sheeting hingedly articulated together by means of a flexible film-like substance covering the lines of separation between said panels, certain of panels forming side walls for the box, paperboard structures attached to the ends of panels in said assembly, paperboard structures comprising relatively narrow attachment means secured to a plurality of said sheeting panels and end closure.

Container, C. F. Gibbons (to Gaylord Container Corp., St. Louis, Mo.). U.S. 2,619,276, Nov. 25. A one-piece blank container having flush, unobstructed exterior and interior faces, said container comprising a body section having a rectangular bottom panel with front, back and multi-ply end walls of substantially equal height extending upwardly therefrom and a cover section hinged to the upper edge of the back wall of the body section.

Method and Apparatus for Sealing Containers, J. Holh and O. Bjering (to Owens-Illinois Glass Co., a corporation of Ohio). U.S. 2,620,111, Dec. 2. The method of sealing containers which consists in continuously moving caps and containers in register above and below distributing means, respectively, and successively subjecting each cap and container as it is moved along in register to a diagonal sheet of inert vapor directed outwardly and rearwardly.

Apparatus for Sealing Containers, J. Hohl and O. Bjering (to Owens-Illinois Glass Co., a corporation of Ohio). U.S. 2,620,-112, Dec. 2. In a rotary sealing machine, a steam distributor comprising an outer arc-shaped channel, an inner arc-shaped channel concentric with and spaced inwardly from said outer channel, channels having openings in channel walls.

Double-Walled Carton, L. J. McDonough (to Corson Mfg. Co., Lockport, N.Y.). U.S. 2,620,116, Dec. 2. A duplex box formed of a single blank comprising a plurality of aligned successive sections folded around each other, along parallel marginal lines in one direction only and forming an inner sleeve portion and an outer sleeve portion spaced from and surrounding the same.

Pallet-Load Divider Tray, P. A. Nemcede (to Container Corp. of America, Chicago, Ill.). U.S. 2,620,117, Dec. 2. A collapsible load divider formed from a single sheet of paperboard material comprising in its collapsed condition a substantially rectangular panel, inner wall members each hingedly joined to one edge of panel and extending outwardly in the plane of said panel and outer wall members each hingedly joined to one of inner wall members along fold lines.

Shipping Container, W. C. George (to Gaylord Container Corp., St. Louis, Mo.). U.S. 2,620,119, Dec. 2. A shipping container comprising connected-together panels forming a polygonal body, each panel having a separate and unconnected integral flap extending from the folded marginal end thereof and having free ends and an end closure including a cover panel and separate unconnected integral folded flanges.

Bag Closure with Label, E. Anderson (to Century Engineering Co., Chicago, Ill.). U.S. 2,620,120, Dec. 2. The combination of an open-ended bag constructed of airtight and water-tight material which may be fused together by a heat

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U. S. patents digest

seal, said bag having parallel side edges and end edges, formed with a longitudinal sealed seam medially of its two side edges throughout its length, a cross heat seal applied at one end to form a sealed seam and a paper label folded about closed edges of bag.

Packaging (Vacuum) Meat Items, J. M. Ramsbottom, S. R. Grinstead and K. D. Aalseth (to Swift & Co., Chicago, Ill.). U.S. 2,621,129, Dec. 9. A method of forming a gasproof package for food products which comprises: fixedly applying a layer of gasproof material to at least one surface of a relatively rigid backing member, said layer being in contact with backing member over at least one entire surface thereof.

Printing Ink, C. G. Cutler (to Sun Chemical Corp., New York, N.Y.). U.S. 2,621,130, Dec. 9. An ink composition comprising a vehicle including a water-immiscible resinous binder, a water-miscible liquid polyglycol solvent and water-dispersible and glycol-dispersible non-toxic surface active agent, said surface active agent being present in amount from approximately 39.6% to approximately 62.1% by weight of said binder.

Container Closure, C. J. Jesnig (to Package Devices, Inc., Philadelphia, Pa.). U.S. 2,620,938, Dec. 9. In a container, a vessel having a rigid neck provided with a neck opening and having an external annular neck ring on the neck which has a conical annular surface tapering abruptly outwardly from the end of the neck ring adjoining the neck opening to an annular apex which has the largest diameter of the cap area of the neck ring and then a reverse conical annular surface tapering abruptly inwardly from the annular apex and a resilient elastomer cap having an end portion which extends over, closes and seals.

Sealing Closure for Containers, G. A. Weisgerber (to Johnson & Johnson, a corporation of New Jersey). U.S. 2,620,939, Dec. 9. A container having an opening and comprising in combination an end surface surrounding the opening, a wall surrounding the end surface, a cap, means on cap and wall adapted to cooperate to urge the cap toward the end surface, and a sealing membrane for closing the opening, membrane including a heat-sealing adhesive film.

Machine Having Divergently Related Bag-Supporting Conveyor for Filling Such Bags with Objects, S. Messina (to California Packing Corp., San Francisco, Calif.). U.S. 2,620,958, Dec. 9. A packaging machine comprising an endless chain having a plurality of outstanding fingers thereon adapted to receive and support open bags to be filled, a wheel engaged by chain to place bags in position to be filled by gravity.

Filling Machine, B. S. Harrington (to Armour & Co., Chicago, Ill.). U.S. 2,620,960, Dec. 9. In a filling machine, a measuring cylinder provided at the ends with ports for the inflow and outflow of fluids, a filling nozzle for and communicating with each of the ports for the outflow of fluids and means for feeding containers to be filled below said filling nozzles.

Carton-Flap Opener, E. A. Wahl and R. J. Winters (to P. Ballantine & Sons, Newark, N.J.). U.S. 2,620,961, Dec. 9. Apparatus for unfolding the folded closed flaps of unsealed cartons comprising a conveyor, a blower mounted adjacent a side of the conveyor, said blower having a housing supporting and journalling the blower for rotation in the housing and being equipped with an air intake opening in the housing at the intake of the blower.

Package or Container, C. Powell (Bernard B. Workman, New York, N.Y.). U.S. 2,620,962, Dec. 9. A package or container composed of a single blank and comprising a bottom and side and end walls, the material of the blank at the ends of the container sloping downwardly within the container toward the container bottom, means for locking the two free ends of these sloping portions in relation to the bottom wall, each sloping portion being provided with at least one longitudinal slit intersected at each of its ends.

Package, A. G. Rose and J. A. Gilbert (to Rose Bros., Ltd., Gainsborough, England). U.S. 2,620,964, Dec. 9. A wrapped package of the kind comprising a sheet of flexible wrapping material folded about an article of substantially rectangular form with unfolded portions lying against one end and two opposed faces, namely, the upper and lower faces, of the article with lateral extensions of those portions lying against opposed sides of the article and longitudinal extensions of those portions lying against the opposite end of the article.

Tensile strength —

(*This article continued from page* 127)
materially reduced by omission of the residual fraction.

It is felt that from the studies of both the composition and the mechanical properties of the waxes examined, Wax A contains substantial proportions of hydrocarbons other than normal paraffins. These hydrocarbons are of the same type as those responsible for the characteristic properties of microcrystalline wax. They are present in approximately the proportion which gives optimum mechanical properties. This is in vast contrast to conventional waxes whose composition is such that optimum mechanical properties can only be obtained by gauged additions of microcrystalline wax. These qualities appear to be due to the unique process and raw materials used in manufacture of Wax A which yield from a single operation a product with essentially the properties obtainable otherwise only by blending waxes of conventional types.

Acknowledgments

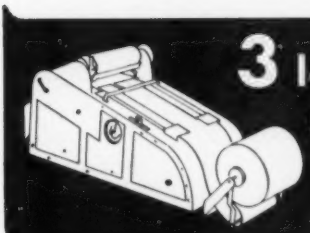
Messrs. C. F. Duchacek and J. B. Craig were responsible for the tensile-strength measurements and Messrs. J. E. Gieseke and M. O'Buch were responsible for the distillations. Their assistance is acknowledged with appreciation.

Recut Diamond

(*This article continued from page* 103)
package is designed in two shades of blue, without the red. For example, the DeLuxe grade of paper plates is packed in a cellophane wrap on which the blue diamond emblem and product name are overprinted in blue script. All design motifs are planned to allow ample space for printing special merchandise offers as required.

On all the new packages it's the diamond that delivers the punch, illustrating again the power of simple, strong design elements in today's markets.

CREDITS: *Design, Frank Gianninoto, 250 Park Ave., New York. Folding cartons, Gardner Board & Carton Co., Middletown, Ohio. Cellophane wraps, Milprint, Inc., 4200 N. Holton St., Milwaukee 1, Wis. (All other packaging supplies are produced by Diamond Match Co.'s own facilities.)*



3 label problems solved by one machine in one operation

1 HOW CAN QUANTITIES OF LABELS BE PREPARED WITH THE SAME INFORMATION . . . QUICKLY AND EASILY?

Type a stencil with the information, slip the stencil on the Weber Tag-O-Graph KC-E, set the automatic counter for the number of labels needed, and press the switch. That's all you have to do to get shipping and identification labels that are printed, addressed or marked, counted and cut to size . . . at the rate of 100 per minute.

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Print your own labels at the same time you're addressing or marking them. We can die-cut your stencils, in quantity, to print any style label or form you want. Firms now using the Tag-O-Graph KC-E are saving up to ⅔ of their former label costs.

3 HOW CAN WE SYSTEMIZE LABEL PREPARATION?

Let one versatile machine do all the work. The Tag-O-Graph KC-E produces a completely prepared label. It gives you practically any size label you want in gummed or ungummed stock. It gives you the kind of labels you want, when you want them, in the exact quantity you need . . . all at a moment's notice.

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If you are now using large quantities of shipping or identification labels, or if a Government contract has suddenly presented a new labeling problem, it will pay you to look into the advantages of the Weber Tag-O-Graph KC-E.

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Send descriptive folder on the Tag-O-Graph KC-E and samples of labels printed by this machine.

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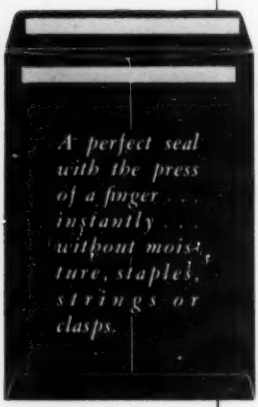

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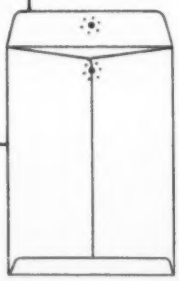

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EQUIPMENT • SUPPLIES • SERVICES

CARTON CLOSING MACHINE. Bulletin describes an adjustable carton closing machine adaptable to both plain tuck top cartons and lined tuck top cartons. Package Machinery Co. **(B-351)**

THERMOPLASTIC LABELING MACHINE. Folder explains the advantages of dry labeling and tells how the automatic "Label-DRI" applies thermoplastic labels to glass containers of various sizes and shapes. New Jersey Machine Corp. **(B-352)**

PRESS WITH IMPROVED SHEET DELIVERY. Illustrations and explanation of the new rotary cutter and sheet delivery system available on Champlain rotary inline presses. Champlain Co., Inc. **(B-353)**

CARTON WRAPPING MACHINE. Descriptive folder on the operation of the Hayssen wrapping machine for automatically applying cellophane and other over-wraps to cartons of various dimensions. Hayssen Manufacturing Co. **(B-354)**

CAN PACKERS AND BOOSTERS. Summary of advantages, operational information, and specifications and features of various can packers and boosters. Standard-Knapp, Div. of Emhart Mfg. Co. **(B-355)**

GRAVITY CONVEYERS. Booklet on roller, staggered wheel, and side wheel conveyors and accessories. Includes specifications, engineering data, and application information. Packaging Equipment Div., Food Machinery and Chemical Corp. **(B-356)**

MANUALLY OPERATED BAG SEALER. Bulletin describes an electrically heated, manually operated sealer for polyethylene or "Pliofilm" bags up to 8-in. wide. Mercury Heat Sealing Equipment Co. **(B-357)**

"PRINT-AD-STRING." Details on a tough, non-woven, cotton industrial tape which may be printed with brand names, slogans, codings, or footage indication. Chicago Printed String Co. **(B-358)**

GREASEPROOF COATINGS. Technical Service Bulletin gives data on the various lacquer, hot melt, and emulsion coatings available to render paper and board greaseproof. Evaluates coating methods, costs, and effectiveness. National Adhesives, Div. National Starch Products, Inc. **(B-359)**

LABEL GLUERS. Descriptive folder on several machines which automatically apply an even coating of adhesive to the back of labels for adhering to boxes, bottles, and other containers. Schaefer Machine Co. **(B-360)**

CONTINUOUS BAND SEALER. Features, specifications, and operating data on the Doughboy continuous band sealer for heat sealing a wide range of bags, drum liners, and other film containers. Doughboy Industries, Inc. **(B-361)**

COLORED FOIL. Swatch booklet contains samples of twenty-three plain and embossed varieties of colored foil produced by Floyd A. Holes Co. **(B-362)**

"SELF-SEAL" OPEN END ENVELOPES. Sample selection of various open end envelopes which seal securely by application of hand pressure to the folded flaps. United States Envelope Co. **(B-363)**

TRANSPARENT PLASTIC CONTAINERS. Folder contains data on the dimensions, sizes, closure styles, and products which may be packaged in "Clearsite" rigid or flexible plastic containers. Celluplastic Corp. **(B-364)**

STRETCHABLE BURLAP WRAP. Descriptive folder on the use of "Redi-Rapt" two way stretch burlap spiral tubing for simplified effective packaging of rolls of hose, bundles of clothing, rugs, etc. Chase Bag Co. **(B-365)**

BOX SEALING WITH "SCOTCH" TAPE. Folder tells how six "Scotch" brand pressure sensitive tapes can be used for box sealing tasks. Table lists the properties of these tapes which are engineered for box sealing applications. Minnesota Mining & Mfg. Co. **(B-366)**

BAG MAKING MACHINE. Bulletin on a high-speed machine which makes flat and satchel type bags, either lined or unlined, from both heavy and light-weight papers. Hol-Bag, Inc. **(B-367)**

TUBE FILLERS. The major items in the Colton line of automatic, semi-automatic, and hand-operated tube fillers and closers, and can and capsule fillers are described in a broadside folder. Arthur Colton Co. **(B-368)**

VENTILATED FILM. Details on the advantages of using "Respiro-Pak" ventilated film for superior prepacking of produce. Cello-Masters, Inc. **(B-369)**

AUTOMATIC JAW BAG SEALER. Bulletin on a high speed jaw bag sealing machine for cellophane, polyethylene, "Pliofilm," glassine, foil, and other heat sealing papers and plastics. Available with automatic labeling device. Amsco Packaging Machinery, Inc. **(B-370)**

AUTOMATIC LABELING MACHINE. Details and specifications of the "Lightning" high-speed automatic labeling machine for application of body labels to round bottles and jars using full surface glueing. Alfred Hofmann & Co. **(B-371)**

"PACK TO ATTRACT." Booklet illustrates many of the methods by which corrugated shipping containers can be effectively used to dramatize and increase the sales of products. The Hinde & Dauch Paper Co. **(B-372)**

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MOUNTING AND PROVING MACHINE. Operations, specifications, features of the new Mosstype machine for off-the-press in-register mounting and proving of rubber printing plates. Mosstype Roller Co., Inc. **(B-373)**

FOLDING CARTON STYLES. Informative booklet illustrates 34 different styles of folding carton construction plus several additional patented variations. Check list of points to be considered when developing and ordering cartons. Robert Gair Company, Inc. **(B-374)**

DOUBLE EMBOSSER. Details on the Dilts double embosser which enables changeover from one embossing pattern to another in a matter of minutes. Dilts Machine Works, Div. Black-Clawson Co. **(B-375)**

ENGRAVED INKING ROLLERS. Bulletin illustrates various "Evenflo" precision engraved rolls for applying ink, plastic, adhesives, and other fluids in aniline presses. Paper Machinery and Research Corp. **(B-376)**

"STOKESWRAP" AUTOMATIC PACKAGER. Bulletin illustrates the various types of packages which can be formed and filled automatically on "Stokeswrap" machines. Two machine models and several variations are described. Stokes & Smith Co. **(B-377)**

PREPACKAGING PRODUCE IN POLYETHYLENE BAGS. Booklet explains the importance of ventilation in produce packaging, recommends bag sizes for various fruits and vegetables, and gives procedure for proper refrigeration. Durethene Corp. **(B-378)**

INDUSTRIAL HUMIDIFIER SYSTEM. Contained in this illustrated booklet are the advantages and description of a system for maintaining controlled humidity in offset printing, bag making, and paper carton plants. Walton Laboratories, Inc. **(B-379)**

PACKAGE TOP LABELER. Specification and data sheet on a labeling unit which affixes thermoplastic labels to the top side of overwrapped or plain cartons. Oliver Machinery Co. **(B-380)**

SACKING SCALES. Specification sheet on two top reading scales for checking and sacking operations. The Exact Weight Scale Co. **(B-381)**

V.P.I. ENVELOPES FOR METALS. Sample and descriptive bulletin on "DryVapor Pack-Velopes," protective envelopes for steel and aluminum pieces, which prevent rust and corrosion without use of greases and goos. Berlin & Jones Co. **(B-382)**

"PLIOFILM" LINED BAGS. Leaflet describes "Kard-O-Pak," a self opening, flat bottom bag with a protective "Pliofilm" liner for packaging foods, chemicals, drugs, and similar products. American Bag & Paper Corp. **(B-383)**

EXTRUDED AND INJECTION MOLDED PLASTICS. Booklet illustrates various extruded and injection molded products of this company including some interesting plastic packagers. Lists properties of various plastic materials. Elmer E. Mills Corp. **(B-384)**

GUIDE TO CAST PLASTIC FILMS. Physical and chemical properties of six basic types of "Vinylite" cast plastic films are outlined in a useful handbook. Bakelite Co., Div. Union Carbide & Carbon Corp. **(B-385)**

LABELING MACHINES. Brochure illustrates and describes various machines for applying one or two labels at a time to bottles, and for applying end labels and all-around labels to other containers. Pneumatic Scale Corp. **(B-386)**

MULTICOLOR ANILINE PRESS. Bulletin lists the advantages of the "H.H.H.-Jet" multicolor aniline printing press for printing on paper, film, foil, and other webs in up to six colors. H. H. Heinrich, Inc. **(B-387)**

RUST-PREVENTING PAPER. Case histories show how Angier V.P.I. paper is used to protect metal from rust at lower cost than by older methods such as oil or grease flushing. Angier Corp. **(B-388)**

PACKAGING MANUAL FOR SELF-SERVICE MEATS. Complete handbook on the subject covers the dollars and cents aspect of prepackaging meats, the technique for using "Pliofilm" properly for various cuts, film recommendations, merchandising suggestions, efficient packing room layouts, and all other pertinent details. The Goodyear Tire & Rubber Co. **(B-389)**

CELANESE ACETATE SHEETING AND FILM. Brochure gives sizes, colors, physical and thermal properties, formulations, applications, and forms available for Celanese acetate sheeting and film. Celanese Corporation of America. **(B-390)**

HOW TO USE GUMMED TAPE. Leaflet points out step-by-step procedure for maximum protection and economy in the application of gummed tape to shipping containers. Gummed Industries Association, Inc. **(B-391)**

"DA-GLO" COATED PAPER. Bulletin explains the licensing procedure connected with the use of fluorescent "Da-Glo" coated paper. Switzer Brothers, Inc. **(B-392)**

STOCK PLASTIC BOXES. Folders illustrate and list dimensions of 88 molded plastic boxes available without mold cost. Price list included. Bradley Industries. **(B-393)**

COLLAPSIBLE TUBES. Bulletin contains a considerable amount of helpful information on collapsible tubes. Includes data on standard sizes and shapes, openings, closures, decorating, and ordering. Sun Tube Corp. **(B-394)**

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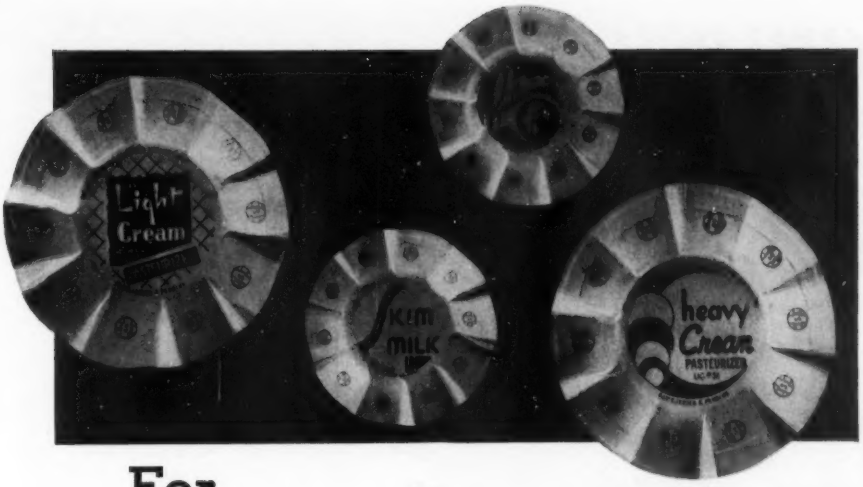

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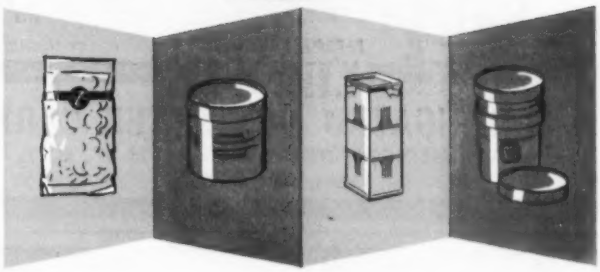

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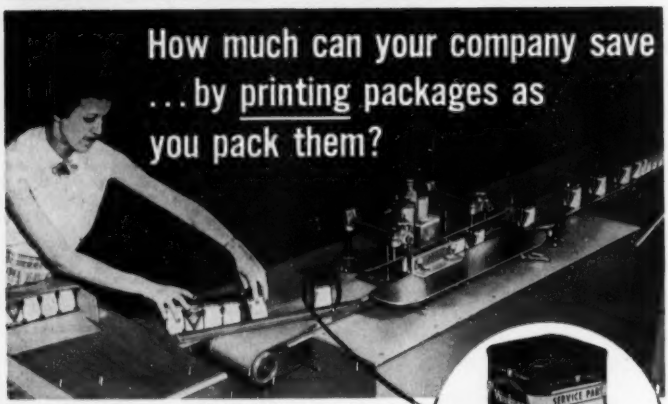

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Forecasting shelf life

(*This article continued from page* 130)
the previously determined ratios, we would anticipate a shelf life in weeks at Jacksonville of 14+ and at Dallas of 19+.

A reference now to Fig. 4 shows us just how accurate our prediction has been. The curve shows an actual shelf life of 16 weeks + at Jacksonville, which is about two weeks above that anticipated. Curve 6 shows an actual shelf life of almost 19 weeks at Dallas, which is a little under a week less than anticipated. Considering the variables encountered, we feel that this is a pretty good correlation.

The question may be properly raised as to the true value of laboratory storage tests if the ratio between them and actual field storage is nearly 1:1. As an answer to this, let us look at the data concerned with distribution Zones B and C and then at more accelerated conditions. Fig. 5 shows the shelf life of a product we shall call Z, when stored at Zones A, B and C in comparison with laboratory storage conditions. Curve 7 is Product Z under the same cycling laboratory storage as shown on the preceding figures. The curve for Zone A is similar to those representing storage at Jacksonville and Dallas, having a little more than a 1:1 ratio with the laboratory conditions. The curve for Zone B shows a shelf-life ratio of 1:3.3. The ratio for Product Z stored in Zone C is higher, but can be only estimated as yet since the data are not complete. It looks as though this ratio may be 1:4.5. We find here that the laboratory storage condition is considerably accelerated with respect to Zones B and C. From the information that we have collected, we have good reason to believe that predictions based on these laboratory storage tests can be quite accurate.

A comparison picture of two different laboratory storage conditions can be obtained by looking at Fig. 6. Curves 8 and 9 represent a product packaged in different manners and kept under the same accelerated cycling storage mentioned in the preceding discussion. Curves 10 and 11 are for the product stored under a more accelerated condition and correspond respectively to Curves 8 and 9. The ratio of shelf life between 10 and 8 is 1:3 and the corresponding ratio between Curves 11 and 9 is approximately 1:2.6. The similarity in ratios

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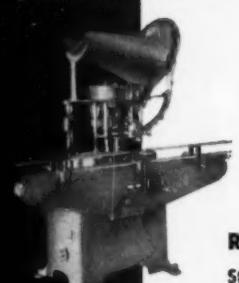

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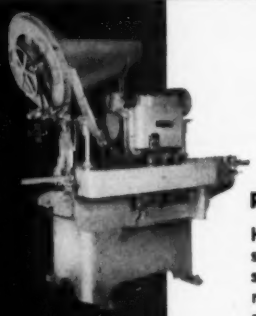

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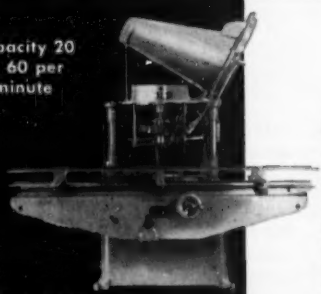
Capacity 20 to 60 per minute



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is a pretty good indication that the greatly accelerated conditions represented by Curves 10 and 11 can be used for shelf-life prediction to somewhat the same accuracy as the original cycling conditions. This is also being borne out in subsequent tests, the data for which are not as yet available. It is pointed out here that the conditions of storage for these further accelerated tests are also on a 24-hr. cycle with respect to temperature and humidity.

The previous discussion has dealt mainly with factors of temperature and moisture. Experience over a period of years has shown that shelf life limited by grease soakage of packages from products with high fat contents also can be predicted by laboratory storage. Although formal data cannot be presented in this case, it is known that a four-week storage at a high temperature condition that is constant or a three-week period in a cycling condition wherein the humidity is high is equivalent to the total shelf life required for the product under actual field conditions.

Oxygen as a factor affecting shelf life can also be evaluated by laboratory tests. The data shown in Fig. 7 were accumulated over a period of time for a product whose quality is dependent upon protection from oxidation as well as the temperature of storage. The storage time at which the product had deterioriated one-half the way to being unacceptable is plotted against storage temperature. The curve marked A is for a product packed in air in a permeable package. The curve marked N is the same product sealed with an atmosphere of nitrogen in an impervious package. Knowing the shelf life of the product packed in air and from comparative weather data in various storage localities, we have been able to make a prediction concerning the shelf life of the product packed in nitrogen. Based on the prediction from these data of a 40- to 50-week shelf life under the severest conditions encountered in the field, which was at the 76 to 74 deg. F. average, the decision was made to proceed with the costlier but more protective nitrogen packing. The experiments were continued to accumulate the data shown in Fig. 8 for the completely expired shelf life of the product. We then found that the actual shelf life at the severest storage conditions was slightly higher than our predictions, averaging about 60 to 70 weeks in

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Write for illustrated brochure.

comparison with the 40 to 50 weeks that we predicted.

Many of the storage tests used to accumulate these data cannot necessarily be considered as accelerated. However, now that we have the information shown in Fig. 8, that part of the test which was accelerated, the 85 to 90 deg. F. area, can be used for further predictions that are quite accurate. Such predictions must be based on average temperature conditions existing in the various localities in which the product is to be distributed, usually those which are most severe. It is pointed out here that the shelf life of these products will also be dependent upon the time of year they are distributed. A breakdown of weather data by months will usually suffice in making fairly accurate calculations.

Our discussion so far has dealt with prediction by comparison. Prediction from laboratory data of the shelf life of a product on which no previous information is known is very difficult. This is especially so when more than one factor is contributing to deterioration or the factors are affecting quality indirectly. In some instances where a single factor is causing direct changes, straightforward calculations have been of value.

For those cases wherein moisture causes a direct physical change in a product, an equation has been worked out by a packaging research group at General Mills, Inc. (4). The usable form of the equation is:

$$W = R_1 T(p_1 - p_0)$$ where:

W is the weight of moisture transmitted to the product

R_1 is a constant for the package determined from the permeability of the package and expressed as units of water-vapor transmission per unit of time per unit of vapor-pressure difference from the inside to the outside of the package

T is the time of storage, p_1 is the vapor pressure in the external atmosphere

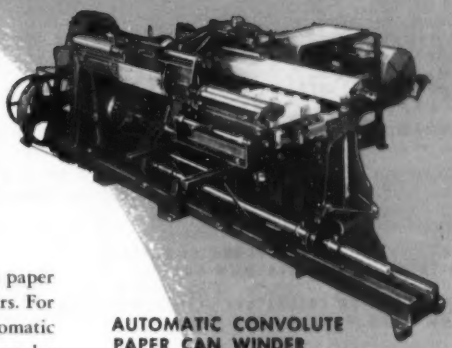
p_0 is the vapor pressure inside the package which is determined from humidity equilibria data.

Knowing the permeability of the package, the humidity equilibria and critical moisture content of the product and the storage conditions under which the product is to be kept, it is possible to calculate shelf life by a series of approximations. The General Mills group has shown that calculations made by this method correspond

STRONG, DURABLE Paper Wound Cans *Save* Money and Metal

As all-purpose containers, Knowlton Convolute Wound paper cans have distinct cost-saving advantages.

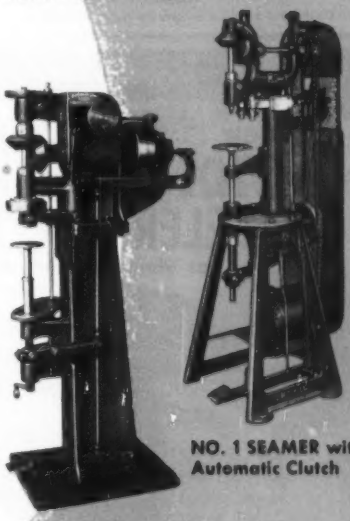
Paper wound cans are tough and strong, and require metal only for tops and bottoms. They can be made in a wide variety of sizes as well as a number of attractive shapes and designs. Let us supply you with some facts and production costs and capacity of Automatic Convolute Winders.



AUTOMATIC CONVOLUTE PAPER CAN WINDER

SEAMERS

Trim, tight attachment of tin tops and bottoms to paper can bodies can be assured by using Knowlton Seamers. For round paper cans, the two-roll round, semi-automatic Seamer No. 1 with Automatic Clutch, and for irregular shaped bodies, the two-roll semi-automatic Seamer No. 3 does the job. Light, medium or heavy-ply thickness fibre can bodies can be seamed by either machine. Let us send you detailed folder that describes how you can obtain large, economical output from these Seamers.



NO. 1 SEAMER with Automatic Clutch

NO. 3 SEAMER

KNOWLTON LOW-COST PRODUCTION EQUIPMENT

SET-UP BOX
- Single and Double Scorers
- Single and Double Rotary Creasers and Cutters
- Single and Double Corner Cutters
- Single Stayers (All Sizes)
- Universal Coverers, Power (All Sizes)
- Hand Power Coverers (All Sizes)
- Bench Coverers
- Toppers (All Sizes)
- Slitters and Rewinders
- Flange Benders (Automatic)
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PAPER TUBE & CAN
- Automatic Convolute Paper Can Winders
- Spiral Winder (Light & Heavy Wall)
- Spiral Cut-offs
- Tube Recutters
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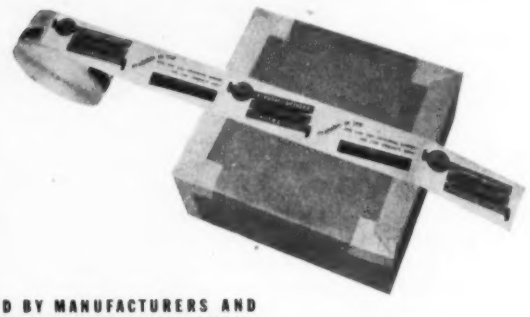

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307

very well with actual field storage tests.

There are undoubtedly other methods for calculations with which I am not thoroughly familiar, such as the Oswin Slide Rule and B. C. L. Method published by British Cellophane, Ltd.

Conclusions

From the information we have been able to assemble, we have come to the following conclusions:

1. The prediction of shelf life of a packaged product by comparison can be fairly accurate. This type of prediction is made by utilizing historical data in conjunction with packaging laboratory data.

2. No accurate prediction can be made on products affected by more than one factor when no historical data has been accumulated.

3. Predictions by calculation from packaging laboratory data can be made that are rather accurate for the specific case wherein moisture is the controlling factor causing a direct physical change.

4. Storage conditions and distribution practices are variables very impractical to control and must be considered in applying any predictions made from laboratory tests. For this reason, any great accuracies cannot be expected to exist.

These conclusions are based on the information that is presently known and are not to be considered by any means as final. Through the efforts of such organizations as the Packaging Institute, which can draw from the thinking of the entire packaging industry, undoubtedly new and more inclusive test methods will eventually be developed. Each bit of additional data that can be accumulated will draw us closer to the ultimate solution of the problem of accurately predicting the shelf life of products before they are put on the market.

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4. Felt, C. E., et al., "Determination of Shelf Life of Packaged Cereals," *Cereal Chem.*, *22*, No. 3, p. 261 (1945), and MODERN PACKAGING, *18*, No. 10, p. 137 (June, 1945).

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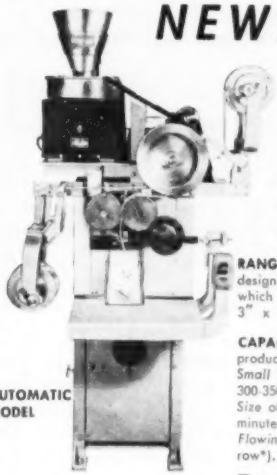
UNIT PACKAGERS

The WRAP-ADE UNIT PACKAGERS are *low cost* machines that perform an entire cycle of packaging operations—including feeding, filling, forming and sealing. They have been built on the simplest possible principles conducive to high speed automatic packaging, versatility, and low upkeep costs. The variety of products handled is limitless and practically every type of heat sealing material can be used.



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RANGE OF SIZES: Can be designed for any products which require packages up to 3" x 7".

CAPACITY: (Depends on product. Below are examples.) *Small items*—such as Tablets: 300-350 per minute. *Units the Size of a Bottle Cap*: 125 per minute (single row*). *Free Flowing Powder Packets*: 2" x 3"—70 per minute (single row*). *Duplex Feed, where practical, will double speed.

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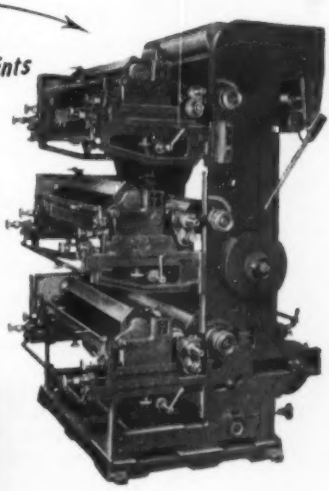

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Tailored to size, Superior Cushioning PROTEX Pads and Blankets eliminate costly, time consuming assembly of complicated interior packing. Increased packing output and material savings plus greater protection means greater profits for you and better service to your customers.

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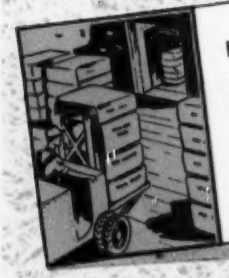

IMPROVE HANDLING PROTECTION

To get maximum protection from rough handling, use PROTEX Pads and Blankets... whether it is a completely cushioned wrapper, cushioning within a container or improved car-loading by using these resilient Pads and Blankets as buffers and dividers.

Consult us— Use our free consultation service. Present your packing problems to us and get our suggestions on how to improve your package performance and save money too! Write or phone us direct.

AMERICAN EXCELSIOR CORPORATION
1000 N. Halsted St., Chicago 22, Illinois

Institute date changed

A change has been announced in the date and location of the Fifteenth Annual Forum of the Packaging Institute. The Forum will take place on Oct. 12, 13, 14 at the Hotel Statler, New York, instead of one week later at the Hotel Commodore, as previously announced. Robert deS. Couch, PI president, said the change was made primarily to avoid conflict with annual conventions of the Packaging Assn. of Canada, Nov. 1-7, Toronto, and the Society of Industrial Packaging and Materials Handling Engineers, Oct. 18-24, Boston.

Grape merchandising

Display of grapes both in bulk and in cellophane bags resulted in sales 17% larger than when only one of these two methods of display was used, it was found in a merchandising experiment conducted in Kansas City by the Fruit & Vegetable Branch of the Production & Marketing Administration, U. S. Dept. of Agriculture. In the test, equal display space was given to each of the two sales methods. When displayed only in bulk or in bags, sales were approximately equal.

The study showed that waste and spoilage losses were sufficiently reduced by pre-packaging to pay the cost of the cellophane bags and the additional labor required to pack the grapes in the bags.

The United Fresh Fruit & Vegetable Assn. conducted a parallel test, in cooperation with the Department, in 108 retail stores in widely separated sections of the country. These stores reported results similar to those found in the USDA Kansas City test. Many stores found that packaged grapes sold better when cellophane bags were left open, rather than closed. Satchel-bottom and square-type bags were preferred over flat or envelope-type bags and 300-gauge perforated cellophane appeared to be satisfactory. Both types of bags were designed and furnished for the test by the National Flexible Packaging Assn.

An eight-page report of the USDA test, "Packaging Seedless Grapes in Cellophane Bags in Retail Stores," may be obtained from the Office of Information Services, PMA, U. S. Dept of Agriculture, Washington 25, D. C. The report includes highlights from the United Fresh Fruit & Vegtable Assn.'s study.

SAVINGS
No. 8 in a series
THE CLEVELAND CONTAINER COMPANY presents the eighth in a series of informative messages to assist all manufacturers, distributors or sellers of products which require more efficient, economical and attractive packaging.

FUNDAMENTALS OF CONTAINERS IN PACKAGING!

THE UNIT PACK CONTAINER (as shown at the left) is for the packaging of individual items such as spark plugs, valves, meters, seal beam lamps, gears, gauges, bearings and small parts. Constructed to exacting government specifications for the military services. Now available for civilian industrial use.

The sidewall is composed of a spirally wound paper tube using exceptionally high grade chipboard for strength and rigidity and lined with a special anti-corrosive greaseproof paper. Between the plies of chipboard is a layer of aluminum foil. This foil combined with two outer plies of duplex and asphalt impregnated kraft provides for a greaseproof and moistureproof package.

Closures consist of black enameled tin, one end seamed on, the other sent separately for assembly by the packer.

Sizes available . . . Inside diameters from 1" to 7⅛". Lengths as desired.

Printing . . . Within size limitations these containers may be printed with bright silver ink. The Intermediate Type Container, a variation of the Unit Pack Container, is a three-piece metal end telescope having the same protective barriers. It is a finished package without requiring the use of a seaming machine. * * *

THE SAVINGS BANK (as illustrated) is constructed with a rigid spirally wound chipboard tube with bright tin plate ends. Available in diameters from ¾" and up. Lengths as desired. Slot in one end. It can be labeled or imprinted within size limitations, as desired.

* * *

THE CURLED END TELESCOPE, a three-piece container, for distinctive packaging of thermometers, drills, cutting tools, reamers, gauges, rods, pencil leads, etc. Made with the use of kraft paper, to provide a strong wall, and a rigid curled end.

WHY PAY MORE? FOR THE BEST . . . CALL CLEVELAND!

Seated on both the top and bottom of the container is a tightly fitted paper disc. If necessary for further strength, a solid fibre disc may be used.

Added protection may be obtained with greaseproof or moistureproof barriers such as parchment, glassine, paraffin, aluminum foil, V.P.I. (Vapor Phase Inhibitor), duplex kraft and cellulose acetate.

Sizes available . . . Diameters from 3/16" and up. Lengths as desired.

Labeling . . . Depending on size, this container may be printed direct or labels applied. Decorative papers can also be spirally wound on its surface.

The Two-piece Curled and Disced Container is also available at a substantially lower price. It has the same wall construction, is composed of two tubes, one telescoped over the other. The outer tube extends to permit packaging items of various lengths. Both parts shipped separately.

* * *

THE DOUBLE COMPARTMENT CONTAINER consists of two metal end friction plug cans, one fitted within the other. Designed for packaging chemicals which must be kept separate until used, as in photography.

This container, likewise, may be lined with special moisture and vaporproof barriers as previously described.

SHIPPING . . . All Cleveland Containers are carefully packed in uniform high test corrugated shipping cartons to ensure ease of handling, safety in transit and economy in storage space. * * *

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6201 BARBERTON AVE. CLEVELAND 2, OHIO
• All-Fibre Cans • Combination Metal and Paper Cans
• Spirally Wound Tubes and Cores for all Purposes
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SALES OFFICES: Grand Central Terminal Bldg., New York City; Washington Gas Light Bldg., Washington, D. C.; West Hartford, Conn.; Rochester, N. Y.
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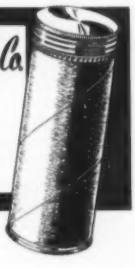

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Yes . . . in both baseball and bags, it's **control that counts.** And from raw flakes to finished product, HOWARD SEAL polyethylene bags are controlled every step of the way; — for uniformity, durability and quality.

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***Howard Seal Bags are controlled* 8 WAYS!**

1. For quality of raw flake
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Filled Packets Within Packets

22nd National Packaging Exposition
April 20-23, 1953
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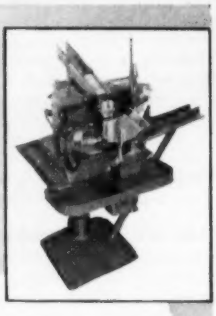

Your packeted products, or those in small, flat packages which require outer envelopes for protection, can be inserted economically with this new Brown Bag Filling Machine. Gives extra protection to the inner packet of ounce fractions up to one ounce quantities of your drug or cosmetic powders, granules, crystals and the like.

Let Brown give you a quotation on this inserting operation. Send us samples of your filled packets.

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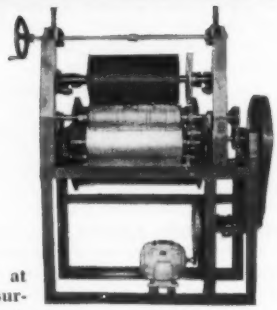

Prints narrow webs at high speed by either surface method or rotogravure. Several units hooked up in series give you a compact multi-color press at amazingly low cost. Excellent for production printing or laboratory work.

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. . . all dependable packaging protection

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If your product requires soft cushioning—JIFFY's expansion type cushioning absorbs shocks, jolts, and rough handling in transit. It won't scratch or mar even the most delicate finish!

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Whether you use JIFFY materials as interior or exterior packaging—you can depend upon JIFFY to get your product to destination in first-class condition.

Consult our Packaging Engineers on your Packaging Problems.

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Explosion damage

Brief impairment of shipment of only one product, standard phenolic molding materials, was reported as the limit of the effects of the dust explosion Dec. 22 at the Bound Brook, N. J., plant of the Bakelite Co., Div. of Union Carbide & Carbon Corp. George C. Miller, vice president in charge of sales, said damages were estimated at less than $500,000. Production of standard phenolic molding products was expected to resume in from three to six weeks, while supplies on hand permitted normal shipments to most Bakelite customers within two or three weeks after the blast. Production and shipment of made-to-order phenolic molding materials, all phenolic resins and varnishes, as well as all polystyrene, vinyl and polyethylene, remained normal, Mr. Miller said.

Snap-fold display box

(*This article continued from page* 119)

printed in appropriate brand colors, the stem of the separator wedges between the balls and holds them in position, while the top serves as an individual display panel. Because of its construction, the separator when discarded falls in such a manner that it continues to gain attention whether lying on the locker room floor or on the fairway.

At the factory, Acushnet golf balls as received from production are placed three to a tray and positioned with the brand name up. After separators have been inserted, the trays travel by conveyor to a machine that automatically wraps and seals them in cellophane. They proceed to a packing table, where packers snap the carton flats into shape and insert the bottom liner with its attached display platform, packing four trays in each carton. The covers are then snapped into shape and fitted on the filled cartons.

CREDITS: *"Flashfold" cartons, S. Curtis & Son, Inc., Sandy Hook, Conn. Acushnet design, Virginia Precourt, Wellesley Hills, Mass. Paperboard trays, National Folding Box Co., Inc., P. O. Box 1004, New Haven 4, Conn. Cellophane, E. I. du Pont de Nemours & Co., Inc., Wilmington 98, Del. Separators, S. Curtis & Son, Inc. Wrapping machine, Package Machinery Co., East Longmeadow, Springfield, Mass. Shipping cartons, International Paper Co., Somerville, Mass.*

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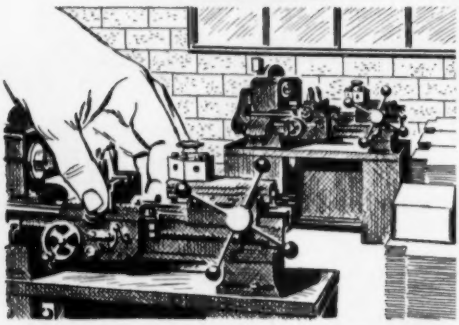
how **METAL EDGE** paid packaging dividends in 3 typical industries

OUR BAGS GOT THE *SACK!*

"Now our tire chains reach the customer protected by bright, sturdy M.E. boxes. Dealers get them in perfect condition, give them better display, and customers like their re-use value."



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"We store M.E. *flats* in 20% of the space required for set-up boxes—and assemble them only as needed. This made room for two turret lathes, while eliminating delays in packaging our replacement parts."

ORDERS ARE EASIER!

"M.E. cut our box needs to a few basic sizes—to package socket head screws and screw machine products in standard quantities. We get faster, more accurate order-filling and inventories . . . plus more attractive packages."

METAL EDGE—*the engineered method*—*has solved diverse packaging problems in over 100 American industries.*

NATIONAL METAL EDGE BOX CO.

PACKAGING • MATERIALS HANDLING • INVENTORY CONTROL

334 North 12th Street, Philadelphia 7, Pa.

METAL EDGE

In-plant box former

(*This article continued from page 99*)
boxes are deposited in the top of the trough, the bottom box begins to move back toward the opposite end of the machine on a lower level, held under compression so that the glue has an opportunity to set up before the box is ejected at a point below the supply magazine.

Although the original model of this new-type box-making machine is non-adjustable, having been built to accommodate one standard size of shipping box, it is indicated that subsequent models may be modified so that a range of box sizes can be handled. For example, a new-type corrugated case meeting Consolidated Freight Classification shipping requirements, to be run by this machine and process, has been developed and is expected to find wide application for such products as canned beer, canned or frozen packaged food products, margarine and other uniformly sized items where its large potential board saving, speed of operation and space-saving features will have much to offer.

CREDITS: *Machine and box structure and method developed by W. R. Saidel, Park Forest, Ill. Machine and packages, American Box Board Co. (licensee), Grand Rapids, Mich. Trays for consumer packages, Container Corp. of America, 38 S. Dearborn St., Chicago, Ill., and Standard Folding Trays Corp., 418 Johnson Ave., Brooklyn, N. Y. Printed cellophane wraps, Milprint, Inc., 4200 N. Holton St., Milwaukee, Wis. Wrapping machines, Package Machinery Co., East Longmeadow, Springfield, Mass. Darex resin emulsion adhesive, Dewey & Almy Chemical Co., 62 Whittemore Ave., Cambridge 40, Mass.*

Tubular jute bags

In England and on the Continent, many firms are making use of jute bags made from tubular cloth, according to a report from Fairbairn Lawson Combe Barbour, Ltd., Leeds, England. Until a year ago all jute bags had been made from cloth woven on flat looms and sewn up one side or both sides to form the bag. Splitting and leakage along the sewn seams was considered unavoidable. The circular-woven bags, which have no side seams, have apparently eliminated this problem for many firms in the sugar, chemicals, coffee and other industries.

DOW

STYRON PACKAGING STIMULATES SALES!

This DOW PLASTIC gives every product its own showcase for better merchandising . . . display . . . protection

The Dow Chemical Company
Plastics Dept., Packaging Section PL 1427
Midland, Michigan
Please send me your latest catalog featuring STYRON PACKAGING.

Name _____

Company _____

Street _____

City _____ State _____

Product to be packaged _____

THESE ATTRACTIVE Plier Pack sets have proved over and over again that sparkling packages made of Styron (Dow polystyrene) are sure-fire sales builders. For Styron offers hand tools, instruments and small parts many packaging advantages in durable protection . . . in eye-appeal . . . in sales!

Sparkling clear or in beautiful color, Styron packaging offers low-cost protection against costly damage from moisture, handling, breakage, and its lightweight reduces shipping costs. And when you package parts and tools in eye-appealing sets, multi-unit sales are assured.

Give your product its own sales-winning Styron package, custom-molded to meet your specific requirements. Or, you may select a suitable container from the wide variety of low-cost standard sizes and shapes. Write Dow today for complete packaging information. THE DOW CHEMICAL COMPANY, Midland, Michigan.

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A great new

LOWER COST

greaseproof

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GLASS-TAK

Grade C, Type 1

for JAN-B-121 requirements

Reinforced with Glass Fabric
Greater Tear and Tensile Strength
Better Moldability

GLASS-TAK overcomes objectionable variations in Grade C material made with inferior fibres, and you get GLASS-TAK's uniformly greater strength at *lower* cost.

SEND FOR FREE SAMPLES AND PRICES TODAY.

THE FLOYD A. HOLES CO.

103 NORTHFIELD ROAD
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SALES OFFICES

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PLASTIC MOLDED BOXES
OVER 100 STOCK MOLDS!
NO MOLD COST!
MINIMUM SHIPMENT 1000 OF A SIZE

Small Heart, clear cover, opaque base, unhinged—2½" x 2⅝" x ¾"

We can make a plastic box to fit your special requirements without a mold cost on sufficiently large orders.

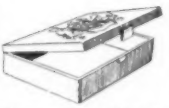
Delivery can be spread over a period of a year.

Send us a sample of your product together with price range and quantity desired. We will return your item packaged, together with full recommendations.

There is no charge for this service.

No. OWB, unhinged, clear or opaque, open wallet box and for many other purposes, September delivery, 9¼" x 3½" x ¾" and 1"

Lace Box, raised lid, hinged, opaque—7⅛" x 4⅞" x 1⅛", also ¾" high



#30 — 3¼" x 2¾" x ¾", hinged

IRA HARMON CO.

41 E. 42nd St. NY 17, NY

MUrray Hill 7-7644

No. 5C Wallet or utility box, hinged, clear, 4½" x 3½" x ½", also 1R, same size, ¾" high

No. 6—inside size, 5⅛" x 1⅞" x ⅞", unhinged, all clear or tutone

Conference on corrosion prevention

More than 240 representatives of industry recently attended a two-day joint conference on preservation and packaging sponsored by General Motors Corp. and the R. M. Hollingshead Corp. in Camden, N. J. Corrosion preventives and peelable protective coatings for metal surfaces in shipment and storage were described, and a new cold-dip plastic for strippable protective coatings was revealed for the first time.

Dr. Herbert H. Uhlig of the Massachusetts Institute of Technology set the stage for the interchange of ideas with a definition of corrosion and a discussion of its causes and mechanisms. The early development of peelable plastic protective coatings was described by Walter Turner, packaging consultant, who listed the advantages of today's Government-approved cellulose acetate butyrate. This material has great flexibility, stability and strength and will form a positive bond at the overlap, he said.

The need for protective oils that will not flow off metal surfaces of aircraft engines during hot or prolonged storage has been met by application of thixatropic compounds, according to Joseph Carroll of the Philadelphia Naval Experimental Station. Mr. Carroll told the group how the Navy developed MIL-C-5545 and used it as a new approach to corrosion prevention. The next step, according to Mr. Carroll, is to see where the basic property of the compounds to remain in place will solve other problems in canning or long-term storage of military and commercial items.

A cold-dip plastic which forms a strippable protective coating on metal parts received its first showing at the Camden conference. M. R. Gatto, Hollingshead research chemist, who described and demonstrated the new material, called it a fluid dispersion of a vinyl resin in plasticizers plus stabilizers, rust inhibitors, colors and fillers. Cold-dip application was reported to simplify processing of parts and to eliminate the loss of volatile ingredients which can occur when hot-dip materials are held in open vats for a period of time. The coating can be completely cured, Mr. Gatto said, through heating by means of infrared lamps or other means and is then "equal to and in many ways far superior to hot-dip material."

Progress in efforts to simplify and consolidate Government specifications was reported by Dr. G. O. Inman of the Rock Island Arsenal. He told the conference how 17 corrosion-preventive specifications comprising 21 grades had been simplified into three specifications of seven grades.

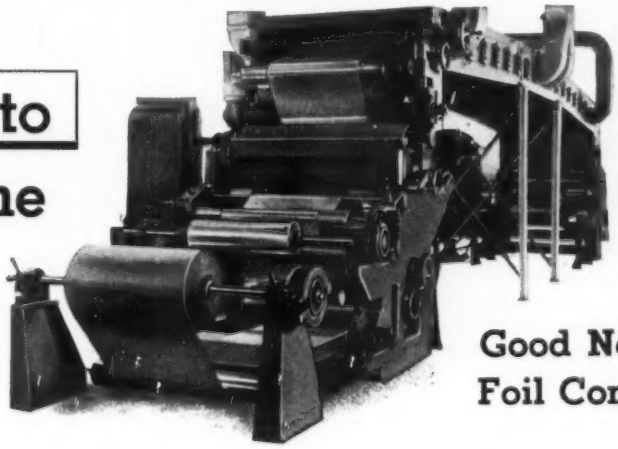
Selection of the proper corrosion preventives was discussed by Charles W. Griffiths, assistant director of Government and industrial research of the Hollingshead Corp. He suggested that they be classified as either solvent, grease or oil types. He presented a description of each type and its advantages and limitations.

Considerations which would aid in the selection of the proper corrosion preventive for a particular service were listed by Mr. Griffiths as: (1) protection properties desired; (2) ease of application and removal; (3) chemical and physical stability under conditions of use; (4) chemical inertness

New

Inta-Roto

Machine



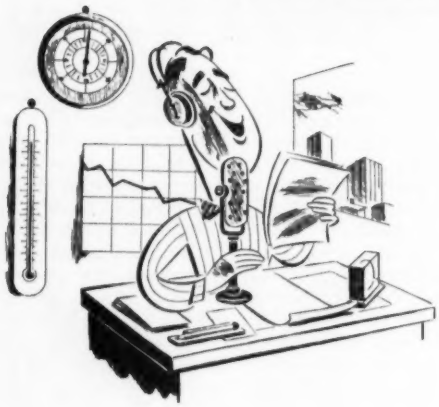
Good News for Foil Converters

Glue or heat-seal laminating (of foil, film or paper) plus coating or coloring, on one pass through machine. Runs foil from .00035 to heavy gauge. Foil feed-in compensates for variations in roll. Runs free hard foil successfully. Glue application by engraved cylinder or conventional metering. Coloring, coating, or print-treating precision unit; permits endless design printing, wide range of cylinder sizes. Pull unit equipped for pressure or heat-seal mounting. Constant tension rewind assures smooth operation and solid rolls from 6 to 36 inches in diameter. Heavily built for high production speeds. Complete package, including dryer; requires no additional purchases. Write today for more information:

INTA-ROTO
Machine Co., Inc.
BYRD AIRPORT
RICHMOND 23, VIRGINIA

Weather Forecast:

PLASTIC PACKAGING FOLLOWED BY INCREASING SALES



While it's true that plastic packages do not provide a universal answer to all packaging problems, reports from all corners of the country tell how pleased retailers and customers are when a product and a plastic package are right for each other.

. . . but there's more to it than telling your purchasing agent: *Buy us some plastic packages.* You owe it to your product to "bone up" on the changing plastics scene.

Each month MODERN PLASTICS brings you the latest items of interest to everyone who uses plastics products in any form. Long a prime source for authoritative comment on *current* plastics developments, MODERN PLASTICS also give you *long term dividends* in the form of enlightening articles, surveys and reports on important phases of the industry.

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MODERN PLASTICS

A Breskin Publication

575 Madison Avenue New York 22, N. Y.

toward parts to be protected; (5) safety regulations; (6) cost and availability.

Lieut. O. R. Cunningham of the Chemical Laboratory at Wright-Patterson Air Force Base brought up the problem of fingerprints as focal points for the beginning of corrosion on highly polished metal parts. He described the use of synthetic methanol as it is outlined in the present Specification MIL-C-15074A in connection with this problem. When used as part of the cleaning operation and as a short-term corrosion preventive, the compound he described has many applications. An example is its use at the air base as a protection for experimental ferrous parts between times of use.

Music on tape

(*This article continued from page* 83)

sleeve are printed the history of the recording, information about the composer and a description of the particular composition. The outer sleeve has a die-cut window on its front face which allows the composition title on the inner sleeve to show through. This arrangement makes it possible to use one standard outer sleeve for all recordings. In addition, the outer sleeve is die cut diagonally across its upper right corner, allowing the corner of the inner sleeve to protrude so that it may be easily grasped and withdrawn. A thumb cut on the inner sleeve then facilitates removal of the reel from this part of the package.

The tape reel itself presented a unique labeling problem due to its curved edge and cut-out design. A bell-shaped label printed on pressure-sensitive tape, including the MaVo-Tape name, "Magnecordings by Vox," copyright data, name of the musical selection, artists, composer and orchestra, was created for this purpose. The use of a removable label permits it to be taken off the reel and re-used if a recording fails to pass exacting final tests.

The full, complete information appearing on the label insures full identification of the tape recording all the way from the package down to the reel itself.

To spark the initial sales of the new pre-recorded tapes, an attractive blue and white easel-type counter display card was created, featuring an illustration of a concert violinist within a distinctive baroque border with die-

the "X" in the Equation!

When you receive a delivery of aluminum foil from Cochran you can be sure that your order has been *fulfilled* instead of merely filled . . . for Cochran's outstanding technical facilities equip us to meet your most exacting specifications.

But you get something more, because Cochran places a special value on the "x" in every business relationship. When you deal with Cochran you receive the benefit of a unique personalized service that goes above and beyond all ordinary standards. People who do business with us will tell you how much this means.

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MOISTURE PROOF
REINFORCED CORNERS
ADDS STRENGTH TO CARTON
EASE OF APPLICATION AND OPENING
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REDCORE.
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Branch offices at
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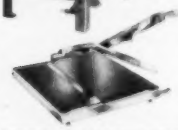
For Faster, More Accurate
CUTTING and SLITTING
Investigate **HOBBS** MACHINES

Ideal for Paper, Cloth, Plastic from Rolls or Sheets



Jacques HAND SHEARS cut widths up to 10 ft. with one easy stroke. Small and large models available — complete with table or designed to fit on your bench — with or without gauges. No other cutters can duplicate Jacques accuracy and ease of operation. Rugged metal construction assures long life.

Jacques POWER SHEAR cuts widths up to 60" at speed of 70 cuts per minute. For continuous or intermittent cutting, automatic or semi-automatic. Special feeding, take-away, and counting devices also available.

Jacques SLITTER and REWINDER handles light material up to 20/1000" thick, widths up to 46" and parent rolls up to 40" diameter. Low maintenance and initial cost.

Hobbs "Tri-Power" DIE PRESS cuts multiple layers of soft, flexible materials (paper envelope blanks, plastics, cloth parts for shirts, suits, corsets, etc.). Capacity: 15 to 20 tons. Standard speed: 16 strokes per min. Warner electric brake & clutch provides fast, easy operation.

Let us help you select the machine that's best for your requirements. Write for literature on these and other Hobbs machines!

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HOBBS MANUFACTURING CO.
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Producers of Modern Converting Machinery for Paper, Plastics, and Fabric.

cut edge. This display, standing 22 in. high and printed in blue, black and grey, is slotted to hold one of the reel boxes. An attached tray in the front holds a supply of printed folders listing the recordings currently available. The design on the front of the folder follows that of the reel package and is printed in the same color combination.

One of these displays accompanies each initial dealer order for 20 or more Magnecordings.

In shipping the finished recordings to dealer outlets, MaVoTape makes use of the same corrugated shipping cartons in which reels of raw tape are received from suppliers. These boxes, which hold 30 of the packaged reels, receive a standard Magnecord shipping label and a large red and white label reading, "Recorded Material—Do Not Store Near Heat or Magnetic Fields."

CREDITS: *Package design, Nugent Studios, 869 N. Dearborn, Chicago. Sleeve-type boxes, Seemar Paper Products Co., 311 W. Superior St., Chicago. Printing and die cutting of reel labels, Cantor Press, 311 N. Desplaines St., Chicago. Counter displays, Niagara Lithographic Co., 520 N. Michigan Ave., Chicago. Pressure-sensitive tape for reel labels, Kleen-Stik, 225 N. Michigan, Chicago.*

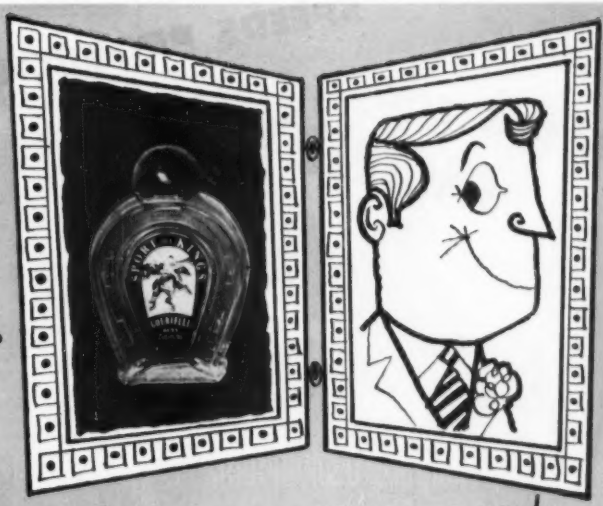
Seal and label sales

A 21% gain over 1951 in sales of embossed metal foil seals and die-cut labels for the 12 months of 1952 has been reported by J. Kirby Tompkins, president of the Seal & Label Institute, 370 Lexington Ave., New York, who said that a total of 109,500,000,000 seals and labels were sold last year in this country.

Mr. Kirby attributed the "unusual" 21% increase in sales to four factors: the Institute's market-expansion program; the growing importance of seals and labels as a stimulant for impulse buying; increased consumer desire for more informative labeling; and growth of seal and label collecting as a young people's hobby.

The Institute's business-building program has been pointing out that seals and labels today do more than merely identify a product's manufacturer. They perform a valuable service in arousing interest or attracting attention and also make sales by satisfying the public's increasing demand for information about what a product contains, how it's used, etc.

Well known Gourielli Sport of Kings toiletries for men feature BEETLE *Plastic caps, molded by Braun-Hobar Corp., Milwaukee, Wis., to special design in a variety of colors.*



beautiful...
functional...
practical...

BEETLE® plastic caps 'em all!

Beautiful? Yes! BEETLE Plastic has color *clear through*—permanent color, any color you wish. It can be molded into any shape desired to carry out your packaging theme.

Functional? Yes! BEETLE gives a good, tight seal that won't back up on threads; molds speedily, too.

Practical? Yes! BEETLE effectively resists alcohol, acetone and common solvents; it's light in weight, yet strong; it resists scratching and chipping; and it won't attract dust on sales counters.

Famed Breck hair preparations are topped by sparkling white BEETLE *Plastic closures, sometimes have applicator attached. Molded by Armstrong Cork Co., Lancaster, Pa., and Scott Plastics Co., Hartford, Conn.*

No wonder so many toiletries manufacturers and other packagers are choosing BEETLE. It has sparked the point-of-sale appeal of so many products . . . chances are it will do a job for your product, too. Write us and see.

AMERICAN Cyanamid COMPANY
PLASTICS DEPARTMENT
32C Rockefeller Plaza, New York 20, N. Y.

In Canada: North American Cyanamid Limited, Royal Bank Building, Toronto, Ontario, Canada

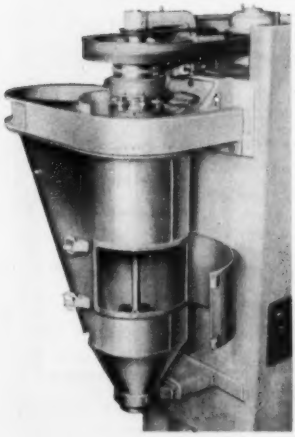
SPEEDS PRODUCTION

SAVES YOU MONEY

4 Ways ...

EG AUGER FILLER

1
Volumetric Filling
2
Packing against Pressure
3
Combination Auger and Vacuum
4
Gross Weighing



Quiet operation is a feature of the E G Filler. View at left shows how V Belt drive and magnetic clutch assure positive silent drive.

View at right shows how all mechanical parts of the E G Filler are mounted above the filling station for easy accessibility and inspection.

Whether your plant is large or small, if your product requires filling by any of the four methods listed, the new Stokes and Smith E.G. Universal filler is your prescription for increased production, more accurate control, and greater flexibility—all at lower cost.

This new filler is chock-full of engineering innovations that mean increased efficiency and greater accuracy in your work.

40% less working parts
No cams or sprockets. Self-adjusting magnetic clutch. Planetary gears totally enclosed for exceptionally quiet performance.

Mechanical Parts Located above filling station
Keeps parts cleaner; reduces down-time for maintenance. Gives a more streamlined appearance.

More Accurate control possible
Micrometer adjustment. Fingertip changeover. Auger speed adjustable from 500 to 1000 RPM. Table adjustable for different heights of containers. Can be pre-timed to pace operator.

Compact Size
24" wide, 31" long, 7'7" high.

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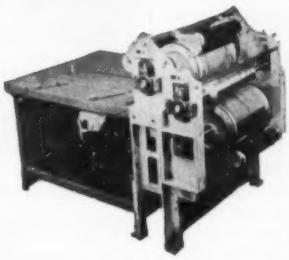
SUBSIDIARY OF FOOD MACHINERY AND CHEMICAL CORPORATION

PRINT YOUR OWN SHIPPING CONTAINERS OR MULTI-WALL BAGS AS YOU NEED THEM



Industrial's Auto Printer

is suitable for imprinting information, addresses, marking, or whatever you may require on your containers or multi-wall bags. It is capable of printing as many as 2400 units per hour. Eliminates hand stenciling.

This is just one of Industrial's coding and marking machines designed specifically for your needs to assure more efficient marking and movement of materials on production lines. Marking equipment is also available for conveyor line use, and for marking munitions and similar items.

Let us help you—send us your problem; we will do the rest.

Write for catalog today.

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Designers and Builders of Marking Equipment for Industry

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PACK TROUBLE FREE IN '53 THROUGH DYN'S CONTRACT PACKAGING SERVICE

Automatic and Manual Operations

WRAPPING into cellophane, foil, glassine, paper

FILLING — fluids, solids, powders

STRIP & UNIT PACKAGING —tablets, capsules, powders, liquids

HEAT SEALING — polyethylene, plastics

ASSEMBLING, collating, boxing, gluing

PACKING, shipping, mailing

Slash your time and costs for sample and package production!

Use Dyn's efficient, well supervised, dependable, honest service for all your packaging, or

Additional labor, equipment, space! Yes, for military packaging, too!

A thousand units or a million! At attractive, predetermined rates! References on request.

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Handy Dispenser for Scouring Powder adds Sales Appeal to Nationally Famous Cleanser
Beautifully Molded Powder Boxes and Rouge Cases add Sales Appeal to Cosmetics
MACK
custom-molded components
Handsomely styled Manicure Display by Mack features Stock Space in Hidden Drawers
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MOLD MAKING

—INCLUDING

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Specify Mack with confidence for all plastic molding requirements. One of the original plastic molders, Mack experience dates back over three decades to the beginning of the industry. From design to final inspection, Mack Molding methods are keyed to meet industry's varied needs. Complete service—from blueprint to finish—features deliveries to meet assembly line schedules. Inquiries will receive prompt attention; address Mack Molding Company, Inc., Wayne, New Jersey.

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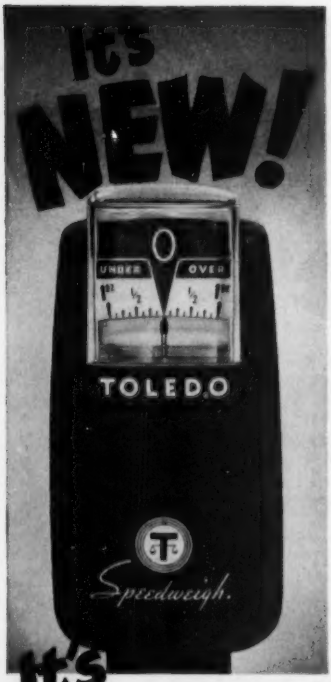

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HERE'S *new speed with accuracy* in check weighing, packaging. 3 sizes —to 5 lb., to 20 lb., to 50 lb.! Shadow-free wide-angle reading . . . accurate to ¼ of an ounce . . . *exclusive* "coined" bearings for greater accuracy, longer life . . . stainless steel beam . . . enclosed levers . . . . . choice of platters and scoops. Write for bulletin 1416. Toledo Scale Co., Toledo 1, Ohio

TOLEDO®
Headquarters for SCALES

Mueller macaroni

(*This article continued from page* 96)

ment operation. An example is the machine-load experiment the company made on its new short-cut-item automatic lines. Each has a theoretical maximum speed of 102 cartons per minute. Four months at this speed produced an average of 1,327 cases per shift. Operation of the same type of line over the same span of time at a variety of other speeds showed that optimum production of 1,477 cases per shift could be obtained at a speed of 90 cartons per minute. This 11.2% improvement in output was accompanied by a 25% reduction in maintenance costs.

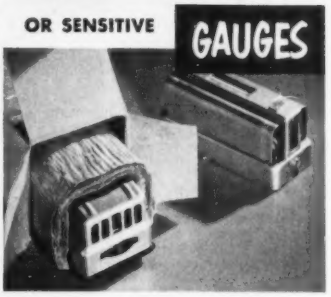
With steadily rising production Mueller knew that more efficient and accurate controls were essential. The company's program of quality control, touching every phase of plant operation, combines modern statistical concepts with psychologically sound "staging" of the test procedures. As a result, individual employees and inspectors develop interest and enthusiasm as well as a growing sense of participation. The effects are sometimes striking. A new system inaugurated about a year and a half ago is reported to have cut out-of-limit defects on the long-goods packaging line so sharply that the entire line now scores fewer weight errors than any one packer made previously. The complete system, of course, covers production right down to procurement of materials of both packages and product.

Future Mueller "master plans" being set up today recognize that statistical controls are one of the basic elements in production and refined mathematical techniques will receive attention equal to that given advanced machine design. Behind the Mueller package, still familiar even in terms of the company's 1907 design, there is a growing, fresh, new spirit. As exemplified by the Mueller package, it is the kind of spirit that spells continued leadership to keep a successful business a step or two or three ahead of competition.

CREDITS: *Cartons, Alford Cartons, Ridgefield Park, N. J.; Atlantic Carton Corp., Norwich, Conn.; Nevins-Church Press, Bloomfield, N. J.; New Haven Pulp & Board Co., New Haven, Conn. Labels, Nevins-Church Press. Waxed paper, Riegel Paper Corp., 260 Madison Ave., New York. Corrugated shipping containers,*

WHETHER IT'S **GEARS**

OR SENSITIVE **GAUGES**



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Until you've tried SOF-RAP, you'll never know how much *better* it protects — how its *flexibility* readily conforms to any shape — or, how its *low cost* and feather-lightness cuts packing and shipping expense. SOF-RAP comes in two types — Single sheet krinkled cushioning for interior protection against shock and vibration; and, Cushioning *plus* a strip-laminated, tough, durable, tear-resistant kraft outer sheet that permits "slippage" — reduces friction damage. Both types come in rolls, sheets, tubes or bags and several thickness weights. Waxed grades also available. Test try SOF-RAP today.

SOF-RAP safeguards your products from the damages of:

- SHOCK
- BOUNCE
- CRUSHING
- BREAKAGE
- FRICTION
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- VIBRATION
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Kieckhefer Container Co., P. O. Box 710, Camden, N. J.; Union Bag & Paper Corp., 233 Broadway, New York. Carton-forming machinery, Peters Machinery Co., 4700 Ravenswood Ave., Chicago 40, Ill.; Pneumatic Scale Corp., Ltd., 65 Newport Ave., Quincy 71, Mass. Carton-closing machinery, Peters Machinery Co. Scales, Exact Weight Scale Co., 916 W. Fifth Ave., Columbus 8, Ohio. Carton-filling and weighing machinery, Pneumatic Scale Corp., Ltd.; Triangle Package Machinery Co., 6633 W. Diversey Ave., Chicago 35, Ill. Wrapping machinery, Package Machinery Co., East Longmeadow, Springfield, Mass. Case-sealing machinery, J. L. Ferguson Co., Joliet, Ill.; Standard-Knapp, Div. of Emhart Mfg. Co., 127 Main St., Portland, Conn.

The package engineer

(*This article continued from page* 81)
to fly to the trouble spot, but it has been found that the majority of the problems can be handled by letter or telephone.

Engineering at Bristol-Myers does no purchasing. In all cases purchasing is left to the individual divisions. Engineering simply makes the recommendation for the specification of the materials and equipment to be used and leaves the selection of the supplier and actual specifying to the purchasing departments. However, the packaging engineer maintains close contacts with manufacturers of supplies and equipment for reference information.

Central Engineering at Bristol-Myers has been set up as a self-sustaining unit of the company. It is financed by service charges to the various divisions. As a sustaining unit it may also perform services for outside organizations and occasionally does outside work on packaging for other companies. However, its first responsibility is serving the divisions of the Bristol-Myers Co. and no outside work can be accepted if it takes time or personnel away from that purpose.

The setting up of package engineering as a special division of Central Engineering has not only paid off in real economies in time and money to the company as a whole, but, the company believes, has brought the engineer into closer contact with product development and selling divisions. This has been of inestimable benefit to all, in that it makes each division appreciate more fully the problems of the other and thus provides a common basis of un-

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For further information and a special sample kit of Reeves Box Tapes, write us on your company letterhead.

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MARKEM SOLVED THIS MARKING PROBLEM

PRINTING LABEL INFORMATION ON CARTRIDGE ENCLOSED FUSES

Working closely with Underwriters' Laboratories, Inc. and with leading fuse manufacturers, Markem has developed a method which makes possible for the first time the printing of label information directly on cartridge enclosed fuses at production rates. Markem's direct ink imprints cannot "fall off" and are unaffected by moisture or ordinary chemical atmospheres. Paper label inventory and wastage problems are eliminated. Print is larger and color coding and identification are simplified. Fuse manufacturers anticipate better labeling at higher production rates and with lower costs. The Markem Method —Markem Machine, Markem type and ink and the special recording die roll for use when UL Manifest is required—as well as the imprint itself meet with UL approval.

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CAN MARKEM HELP YOU? Printing labels directly on cartridge enclosed fuses is but an example of how Markem solves industry's marking problems. Markem has been providing industry with production techniques and equipment to identify, decorate or designate its products, parts and packages since 1911. Markem also provides technically trained men who are available in your area to assure *continued* satisfaction with Markem methods and equipment.

When *you* have a marking problem, tell us about it and send a sample of the item to be marked. Perhaps a complete Markem method has *already* been developed to solve your problem. If not, Markem will work out a practical solution.

Markem Machine Company, Keene 1, N. H., U.S.A.

MARKEM ...TO MAKE YOUR MARK

derstanding for working out mutual problems.

While Bristol-Myers is a large company and its package engineering has been developed to an unusually large scope, the set-up in principle is by no means unique. Most large pharmaceutical companies have similar activities and volume packagers in almost every industry are becoming increasingly aware of the value of the package engineer—a relatively new specialty within the engineering profession.

Desiccants for drugs

(*This article continued from page* 88)

tainer or to supply any needed quantity of desiccant. The pellets may be inserted in any size of bottle by automatic machinery.

Pelletized desiccants are being fabricated into bottle caps, so that cap and desiccant make one unit. The cap has a domed roof into which the pellet fits and a perforated cap liner is placed over it. When moisture enters the bottle, it is adsorbed into the desiccant briquet through these liner perforations.

Many of these desiccant units are still undergoing experiment and only further test use will determine the most efficient forms. Numerous drug products that react adversely to moisture may be considered potential candidates for desiccant protection if the cost can be made suitable.

Usually hygroscopic drug products react to the presence of moisture in one of three ways. They lose potency, they stick or cake, or they suffer some chemical change. For example, effervescent products may "go off" prematurely in the package. Even where such reactions may not be critical, desiccant protection lengthens shelf life and increases consumer appeal.

Desiccant protection for the drug package may prove to have even more far-reaching effects on the pharmaceutical industry than are now apparent. The practical design of such packaging may eventually allow changes in the chemical make-up of pharmaceuticals to incorporate desirable ingredients hitherto excluded because of their extreme moisture sensitivity.

Perhaps equally significant, desiccant packs as used by drug companies and contract packagers suggest possibilities in other fields, such as confectionery, bakery, specialty food products and the like. And alert manu-

facturers of a product that has proved to have a disappointingly narrow distribution area or short shelf life because of some hygroscopic part or ingredient may find it worth while to investigate this protective package component for their own packages.

CREDITS: ***Desiccant compounds**—Silica gel crystals and briquets (Dri-Pax) manufactured and packaged by The Davison Chemical Corp., Baltimore 3, Md. Montmorillonite pellets (Desiccite) manufactured by Filtrol Corp., 727 W. 7th St., Los Angeles 17, Calif., and distributed by Eaton Chemical & Dyestuff Corp., 1490 Franklin St., Detroit 7, Mich. **Packaging materials**—"Webril" fabric, Kendall Mills, Philadelphia, Pa. Acetate for window envelopes, tubes and pillboxes, Celanese Corp. of America, 180 Madison Ave., New York 16, N. Y. **Package units**—Humidity indicators and twist wraps, Driaire Corp., South Norwalk, Conn. "Cylpak" units of Desiccite, Leeds Sales Co., Inc., 294 Fifth Ave., New York 1, N. Y. Tubes made by Stone Paper Tube Co., Washington 17, D. C., with disks by Crystal-X Corp., Lennie Mills, Pa. Pillboxes, Falge Engineering Co., Bethesda, Md. Domed metal screw caps and liners, Columbia Specialty Co., Baltimore 24, Md.*

Retail display space

Grocers should cut down display space for any single item of canned fruit or vegetable to two vertical rows and use the extra shelf space to stock a greater variety. This is the conclusion drawn by the Production & Marketing Administration, U. S. Dept. of Agriculture, from a recent merchandising experiment in five Eastern metropolitan supermarkets.

In the experiment, the five stores averaged 590 cans sold weekly from a two-stack display. For each extra row added alongside the first two, the sales increase averaged 60.9 cans per week. Thus each additional row sold only one-fifth as much as each row of the two-row-only display. The gross profit per shelf foot follows the same pattern and grocers should consider adding new items to the shelf before giving any but "fast-moving items" more than two vertical rows, according to the report.

Titled "Better Use of Selling Space in Retail Stores," the report is available from the Office of Information, PMA, U. S. Dept. of Agriculture, Washington 25, D. C. Additional space-use studies are being made.

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FOR SALE: 2-Brightwood Box Machines, with collapsers; Std. Knapp Self-Adjusting Glue Sealer & Comp. Unit; Pneumatic Seale Packaging Line, late type; Capem SIF Capper; 7-Vacuum & Gravity Fillers, S/S fitted; Stokes & Colton Auto. Tube Fillers & Closers. Only a partial list. Send us your inquiries. Consolidated Products Co. Inc., 16-20 Park Row, N.Y. 38. BArclay 7-0600.

PONY LABELRITE: Factory rebuilt, one year "new machine" guarantee. New Jersey Machine Corporation, 16th Street & Willow Avenue, Hoboken, New Jersey.

AT BARGAIN PRICES

International S. S. Straightline Vacuum Filler. Resina Model LC automatic Capper. Oliver automatic cellophane Wrapper. Stokes and Smith Model A Transwrap Filler. Capem C4F 4 head Rotary Capper. Stokes & Smith G1, G2, G6 and HG88 Auger Powder Fillers. Triangle Elec-Tri-Pak G2C, A6CA Fillers. Filler 4-head S. S. Filler. Knapp 429 and Ceco Carton Closers. Pony ML and M Labelrites. Ceco, Redington and R. A. Jones Cartoning Units. Package Machinery Co. DF and FA Wrappers. Hayssen 3-7, Miller, Scandia Wrappers. Burt adjustable Wraparound Labeler. Hudson Sharp Campbell Auto. Cellophane Wrapper. This is only a partial list. Tell us your requirements.

Union Standard Equipment Company
318-322 Lafayette Street, New York 12, N.Y.

FOR SALE: Model 8 Automatic Simplex Barrier bag making machine. Good condition. Reasonably priced. WANTED: 42" Slitter. Box 492, Modern Packaging.

3-COLOR 24" WEB WIDTH UNIT STAND ROTOGRAVURE PRESS: For vinyl, polyethylene tubing and flat films. Unit includes tension controlled double let-offs, flying splice, double center wind & surface wind take ups, infra-red and hot air drying, cooling drums. A real production unit. Priced for quick sale due to business liquidation. Shawray Printing Corp., 398 Broadway, New York City.

ONE—24" REVERSE ROLL COATER AND PULL ROLL WINDER: Extremely accurate metering and coating device. Reply Ditto, Incorporated, Chicago, Illinois. Phone Nevada 2-1330. Contact Mr. L. L. Lovig.

SITUATIONS WANTED

PLANT MANAGER—INDUSTRIAL ENGINEER: Age 35 with two years experience as Plant Manager, eight years as Industrial Engineer with large midwest paper and plastic company. Experience covers paper and plastic film assembly operations including heat sealing, sewing and packaging plus printing, embossing, coating, sheet cutting and rewinding. Desire management position with emphasis on responsibility, knowhow and future. Box 480, Modern Packaging.

PACKAGING SALES-ENGINEER: Have been demonstrating and selling packaging machinery for the past six years. Have done some sales-promotion work and have both artistic and mechanical engineering background. Wish to sell packaging materials or equipment in New Jersey with aggressive company which has no fixed ceiling on earnings. Married, age 30, and have car. Box 483, Modern Packaging.

PACKAGE DESIGNER: Young woman. Pratt Graduate, five years experience as Artist-Designer with leading firm, seeks responsible position as designer with manufacturer. Capable, creative, thorough knowledge decorative packaging, product merchandising, interested in situation utilizing this knowledge and affording professional and financial advancement. N. Y. C. preferred, will consider other location. Box 487, Modern Packaging.

FOOD PACKAGING PLANT-FOREMAN: College graduate, seeks opportunity with active organization. Six years experience in the processing, manufacturing, and filling of dry food mixes, setting up trial and long run production line for automatic and semi-automatic operations. Complete resume on request. Box 491, Modern Packaging.

PACKAGE DESIGNER: Presently employed by a leading pharmaceutical manufacturer creating and producing packaging. Interested in position creating and developing unique attractive packaging (not necessarily pharmaceutical). Experience encompasses folding and setup boxes, plastics displays, automatic packaging equipment—thorough knowledge of graphic arts. Am an idea man who can carry a job through to its finish. 29 years old, married, college, art and advertising background. Box 493, Modern Packaging.

HELP WANTED

SALESMAN: Progressive converter with modern new factory has openings for several men. No objection to side-line men. We are converters and printers of cellophane, glassine, polyethylene and pliofilm in the form of bags, rolls, and sheets. Our prices are most competitive and quality is top notch. In reply give age, experience, present lines carried, territory covered, etc. Box 478, Modern Packaging.

AGENTS WANTED: We are specialists in Heat Sealed Cello and Polly Bags and Tubes—printed—unprinted—highest quality—lowest prices—fast delivery—wide range of sizes. We meet all legitimate competition. We prefer men handling allied lines. If interested, write: New Jersey Cellophane Bag Co., 175 Clinton Place, Newark 8, N.J.

PACKAGING REPRESENTATIVES WANTED: Pioneer rigid plastic container manufacturer offers good additional packaging line of containers used for drugs, sundries, small industrial tools and parts, fishing supplies and small items. Commission. Box 481, Modern Packaging.

EXCELLENT OPPORTUNITY: For young man with Midwest firm engaged in the development of resins and plastics for building industry. Must have degree in chemistry and three to five years experience in plastics. Prefer experience with plastisols, organisols, hot melt applications, polyester resins, rigid vinyl extrusions, etc. Please include brief resume of experience and salary requirements in reply. Box 482, Modern Packaging.

SALES REPRESENTATIVES WANTED: Large Midwestern company, rated AAA-1 seeks representation. Laminators, printers and converters of cellophane, polyethylene, pliofilm, acetate and foils, and facilities for fabricating rolls, sheets or bags. Complete creative designing and research departments. Territories available on commission basis, selling exclusively or with other lines. In reply state present territories and industries being covered. All replies will be kept strictly confidential. Box 484, Modern Packaging.

PACKAGING ENGINEER: Leading manufacturer in the electrical control industry has opening in Milwaukee, Wisconsin for experienced packaging engineer. Work includes design of cartons, containers and shipping crates for production and shipping. Salary open. Box 485, Modern Packaging.

SALESMAN-SALESMANAGER: Prominent and fast growing Massachusetts converter of cellophane and polyethylene seeks man with executive ability to sell and build sales organization. Must have satisfactory sales record in flexible packaging field and ability to promote and supervise sales. Excellent opportunity for right man. Reply stating age, experience, and salary expected. Replies held in strict confidence. Box 485, Modern Packaging.

ASSISTANT PLANT MANAGER: National converter flexible packaging field—for one of eastern plants. Outstanding opportunity for experienced man. Broad knowledge of printing and bag making equipment and processes. Submit complete resume of experience and background. Box 488, Modern Packaging.

REPRESENTATIVES WANTED: For expanding manufacture of plastic bags. Would be willing to protect territories. Submit details showing lines handled and territory presently covered. Box 489, Modern Packaging.

PACKAGING ENGINEER: Leading manufacturer in the drug and surgical dressings field has opening for a young man interested in the development of new packages. Work includes design of packages for sales appeal, protection, and automatic production. Industrial design or engineering background helpful. Plant located within commuting distance of the New York Metropolitan area. Box 490, Modern Packaging.

SALES REPRESENTATIVES: Manufacturer of heat seal cellophane bags—glassine bags—and combination cellophane and glassine bags, desires a representative handling packaging or other lines, selling direct to the consumers. Royce Paper Co. Inc., 606 Bergen St., Bklyn, 38, N.Y.

MANUFACTURERS AGENTS WANTED: For both domestic and foreign markets, to sell Donofrio Strip Pak Machines and Dismat Strip Packaging Machines to pharmaceutical manufacturers. Write stating territories covered and companies now represented. McKay-Davis Chemical Corp., 328 North Westwood Ave., Toledo, Ohio.

MISCELLANEOUS

PLASTIC SCRAP: Cellulose Acetate and rigid vinyl sheet scrap in any quantity. Also Polystyrene, Acetate, Butyrate molded rejects, scraps and excess molding powder inventories. Box 479, Modern Packaging.

WANTED: Cameron Slitter, Packaging Line, Labeler, Capper, and Mixer. Box 477, Modern Packaging.

PLASTIC SCRAP AND REJECTS IN ANY FORM: Cellulose Acetate, Butyrate, Polystyrene, Vinyl Polyethylene, etc. We pay top prices for clear, colored and printed scrap in any quantity. Box 476, Modern Packaging.

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TO FIND A JOB
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Time and again, individuals and companies in the packaging field have found solutions to their difficulties by advertising in the Classified Advertising section of MODERN PACKAGING. Here, the buyer and the seller have a chance to meet, the prospective employer and the prospective employee get an opportunity to look each other over, the manufacturer can shed his surplus materials or buy up someone elses.

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Modern packaging

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575 MADISON AVENUE, NEW YORK 22, N. Y.

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Modern packaging

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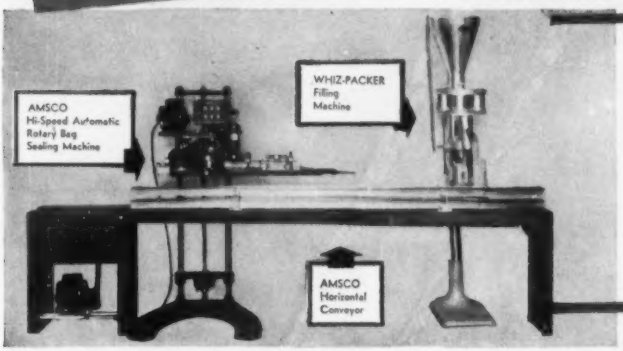

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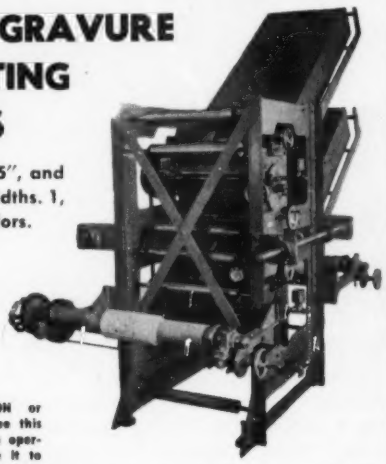

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3. Easier handling and better sealing in the packaging plant—no slip sheeting needed between pouches.
4. FLEX-VAC has a proven record in the field—an unparalleled record of successful sales building.

Famous F & F Laboratories conceived an "all-in-one" package of popcorn, containing the corn, the popping oil, the flavor, and the salt. A transparent flexible package was indicated, one that prevented moisture loss from the popcorn, and allowed no oil seepage. Added requirements were, of course, an eye-appealing heat-sealed package that took brilliant multicolor printing.

Only wide experience with related packaging problems enabled FLEX-VAC to come up promptly with the right package, built of already tested materials.

"Pot o' Gold" POPCORN hit the market on schedule, with no faulty package worries.

Bring your liquid pack problems to Flex-Vac!

Our experience in utilizing fully tested materials is at your command.

FLEXVAC®

For names of many leading packers that are successfully using FLEX-VAC liquid packaging—call or write—

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Created and produced for the Quality Bakers of America. Gravure-printed in seven colors on moisture-proof cellophane by Shellmar's exclusive Colodense Process.

*Power of Suggestion at Point of Sale

Make no mistake about it—the *power of suggestion* influences people at point of sale.

Take this new Shellmar "picture package" for instance. Mrs. Shopper, undecided about what to serve, spies this attractive wrapper. Its realistic, photographic reproduction of a delicious cheeseburger gives her the idea. The result: another sale of Sunbeam Sandwich Buns.

Want to see some *power of suggestion* packages for products in your field? Call in a Shellmar Packaging Counselor soon.

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